CARNARVONSHIRE COMBINED SANITARY DISTRICTS.

REPORT

FOR THE

Year ending December 31st., 1896,

BY

P. FRASER, M.D., B.Sc.,

Medical Officer of Health.

CARNARVON:
Printed by Tom Litherland, Printer to Her Majesty's Government.

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TO THE

Joint Committee of the Carnarvonshire Combined Sanitary Districts.

GENTLEMEN,

I have the honour of submitting to you my Annual Report upon the health of the districts under your jurisdiction.

The twenty-three districts still in union for the purpose of administrating the Health Acts comprise all the sanitary districts of Carnarvonshire along with seven districts in the Counties of Anglesey, Merioneth and Denbigh.

I am, Gentlemen,

Your obedient Servant,

P. FRASER, M.D.

Carnarvon,
April, 1897.

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THE CARNARVONSHIRE COMBINED SANITARY DISTRICT AS A WHOLE.

I.—Area and Population.—The total area of the twenty-three sanitary districts is 568,112 acres, of which the eleven Rural Districts contain 536,097 acres, and the twelve Urban Districts contain 32,015 acres.

The total population of the districts at Midsummer, 1896, estimated on the assumption that the population has moved since 1891 at the same rate and in the same direction as in the previous ten years, was 152,800.

II.—Births and Birth-rate.—The number of births registered during the year 1896 was 4017. This was at the rate of 26·2 per 1000 of population, as compared with 26·4 per 1000, which was the birth-rate during 1895. From the Registrar-General's returns we find that the average birth-rate for England and Wales during 1896 was 29·7 per 1000 of population.

III.—Deaths and Death-rate.—The number of deaths registered during the year was 2866. This was at the rate of 18·7 per 1000 persons living. During 1895 the general death rate was 19·6 per 1000 persons living.

The average death-rate for England and Wales during 1896 was 17·1 per 1000 persons living, which was lower than the death-rate in any previous year excepting 1894.

IV.—Zymotic Death Rate. — The seven principal Zymotic diseases were the cause of 246 deaths as follows :—

Diphtheria, 75 deaths.
Scarlet Fever, 42 deaths.
Measles, 38 deaths.
Whooping Cough, 38 deaths.
"Fever," 29 deaths.
Diarrhœa, 22 deaths.
Smallpox, 1 death.

These 276 deaths were at the rate of 1·60 per 1000 of population. During 1895 the Zymotic mortality was 0·95 per 1000.

The Zymotic mortality for England and Wales during 1896 was 2·18 per 1000 of population.

The death-rate from each of the principal Zymotic diseases in the Combined Districts as compared with England and Wales is shewn in the following table :—

	Seven principal Zymotics.	Smallpox.	Measles.	Scartet Fever.	Diphtheria.	Whooping Cough.	"Fever."	Diarrhœa.
England and Wales, 1896 .. .	2·18	0·02	0·56	0·18	0·29	0·41	0.17	0·55
Carnarvonshire, etc., Districts, 1896	1·60	0	0·24	0·27	0·49	0·24	0·18	0·14
Do., Do., 1895	0·95	0	0·03	0·06	0·32	0·09	0·18	0·25

V.—Infantile Mortality.—Among infants under one year of age there were 494 deaths, being in the proportion of 122 per 1000 registered births. During 1895 the Infantile Mortality was 155 per 1000 registered births.

The average Infantile Mortality in England and Wales during 1896 was 148 per 1000 registered births.

VI.—Mortality amongst Persons aged 65 and upwards.—Of the deaths 931 were of persons at this period of life, which number was at the rate of 6·0 per 1000 of population. During 1895 the death-rate in this class was 6·3 per 1000 of population.

VII.—Phthisis Deaths.—Phthisis was the cause of 296 deaths, being at the rate of 1·9 per 1000 of population. During 1895 the death-rate from Phthisis was 1·7 per 1000.

VIII.—Death-rate from the Chief Respiratory Diseases.—To the chief Respiratory Diseases were ascribed 360 deaths, which number was at the rate of 2·3 per 1000 of population. During 1895 the death-rate from these diseases was at the rate of 2·5 per 1000 of population.

URBAN AND RURAL DISTRICTS COMPARED.

I.—Birth-rate.—In the eleven Rural Districts, with an estimated population of 92,341, there were registered 2472 births, or at the rate of 26·7 per 1000 of population.

In the twelve Urban Districts, with an estimated population of 60,459, there were registered 1545 births, or at the rate of 25·5 per 1000 of population.

During the year 1895, the Rural and Urban birth-rates were respectively 25·4 and 27·7 per 1000 of population.

II.—Death-rate.—In the Rural Districts, 1721 deaths from all causes were registered, being at the rate of 18·6 per 1000 persons living, as compared with 19·2 per 1000, which was the Rural death-rate in 1895.

In the Urban Districts, 1145 deaths were registered, which number was at the rate of 18·9 per 1000 persons living. During 1895, the Urban death-rate was 20·2 per 1000.

III.—Zymotic Mortality.—To the seven principal Zymotic diseases were ascribed 123 deaths in the Rural Districts, or at the rate of 1·33 per 1000 of population. In the Urban Districts there were 123 deaths from these diseases, being at the rate of 2·03 per 1000 of population.

During 1895 the Zymotic mortality in the Urban and Rural Districts was 0·90 and 1·02 per 1000 respectively.

IV.—Infantile Mortality.—In the Rural Districts, among infants under one year of age, there were 314 deaths, being in the proportion of 127 per 1000 registered births.

In the Urban Districts, there were 180 deaths among infants under one year of age, or in the proportion of 116 per 1000 registered births.

During 1895 the Infantile mortality in the Rural and Urban Districts respectively was in the proportion of 148 and 163 per 1000 registered births.

V.—Death-rate among persons aged 65 and upwards.—In the Rural Districts, there were 931 deaths among persons at this period of life, or at the rate of 6·7 per 1000 of population.

In the Urban Districts, there were 310 deaths in this class, or at the rate of 5·1 per 1000 of population.

During 1895, the mortality at this period was 6·9 per 1000 of population in the Rural Districts, and 5·5 per 1000 in the Urban Districts.

VI.—Death-rate from Phthisis.—Phthisis was the cause of 182 deaths in the Rural Districts, or at the rate of 1·9 per 1000 of population, as compared with 1·7 per 1000, which was the rate in 1895.

In the Urban Districts 114 deaths were ascribed to Phthisis, or at the rate of 1·8 per 1000 of population. In 1895, the death-rate

from Phthisis in the Urban Districts was 1·7 per 1000, which was the rate in 1895.

VII.—Death-rate from the chief Respiratory Diseases.—In the Rural Districts 214 deaths were ascribed to the principal Lung diseases, or at the rate of 2·3 per 1000 of population, as compared with 2·2 per 1000, which was the rate in 1895.

In the Urban Districts there were 146 deaths caused by these diseases, or at the rate of 2·4 per 1000 of population. During 1895, the rate was 2·9 per 1000 in the Urban Districts.

The following conclusions may be arrived at from a study of the vital statistics of the year :—

1. The average birth-rate during 1896 remained at practically the same level as during the previous year. The slight decline, 0·2 per 1000, was considerably less than the decline in the average birth-rate of England and Wales, 0·6 per 1000.

The birth-rate in the Rural Districts shows a considerable rise, 1·3 per 1000, but a fall in the Urban birth-rate of 2·2 per 1000, has more than counterbalanced this.

2. The general death-rate shows some amount of lowering, 0·9 per 1000, from the death-rate of 1895, but not as much as is observed in the average death-rate of England and Wales, which shows a lowering of 1·6 per 1000. The decline in the death-rate is chiefly attributable to the Urban Districts.

3. The Zymotic Mortality, though somewhat below the average for England and Wales, shows a considerable rise when it is compared with the exceptionally low Zymotic Mortality of 1895. The rise is mostly due to the Urban Districts.

Of the seven principal Zymotics, an increased mortality, as compared with the mortality of 1895, has occured in the case of four diseases, namely:—Measles, Scarlet Fever, Diphtheria, and Whooping Cough. The mortality from two diseases, Smallpox, and "Fever," has remained stationary, and that from Diarrhœa shows a lowering.

In the case of four of the principal Zymotics, namely : Measles, Whooping Cough, Diarrhœa, and Smallpox, the mortality in the Combined Districts is below the average for England and Wales, while in the case of three, Scarlet Fever, Diphtheria, and "Fever" the mortality is above the average.

4. The Infantile Mortality shows a satisfactory improvement upon that of last year. The lessened mortality signifies that during

the year the lives of 128 infants were saved who would have died if the same rate of mortality had been maintained.

The mortality among infants, both in the Rural and the Urban Districts, compares favourably with the average for England and Wales.

5. The death-rate of persons aged 65 and upwards, during 1896, shows an improvement on the death-rate of 1895. The improvement has taken place chiefly in the Urban Districts.

6. The mortality from Phthisis is somewhat higher than in 1895, a rise having taken place in the Rural and Urban Districts equally.

7. The mortality from the chief Lung Diseases has fallen as much as the mortality from Phthisis has risen. In the Urban Districts a considerable fall has taken place, which more than balanced a slight rise in the Rural Districts.

NOTIFICATION OF INFECTIOUS DISEASES.

The Infectious Diseases (Notification) Act, 1889, has been in force during the year, in nineteen out of the twenty three districts, and applies to a population of 126,388, out of the total population of 152,800.

During the year, 1620 notifications were received from the medical practitioners in these districts. During 1895, 1332 notifications were received from eighteen districts with a population of 127,000.

The cases notified were as follows :—

Scarlet Fever	...	...	921 cases.
Diphtheria ...	...	...	398 ,,
Enteric Fever	...	...	116 ,,
Erysipelas ...	...	...	90 ,,
Measles ...	...	...	47 ,,
German Measles	...	...	18 ,,
Membranous Croup	...	...	11 ,,
Puerperal Fever	...	...	10 ,,
Continued Fever	...	...	6 ,,
Smallpox ...	...	...	2 ,,
Whooping Cough	...	...	1 ,,

The infectious cases notified during 1895, were as follows :—

Diphtheria	...	...	662
Scarlet Fever	...	...	363
Enteric Fever	...	...	120

Erysipelas	...	...	94
Measles...	...	...	32
German Measles	...	...	19
Croup ...	...	...	16
Whooping Cough	...	...	10
Continued Fever	...	...	9
Puerperal Fever	...	...	5
Smallpox	...	...	1
Typhus Fever	...	...	1

Besides these cases from the districts in which compulsory notification has been in force, 122 cases of infectious disease were discovered in the four other districts.

SMALLPOX.

The two cases of Smallpox occurred in Carnarvon. The disease was introduced by a marine engineer, from whom his mother, unfortunately, contracted it with a fatal result. The prompt isolation of the patients in the hospital with which this district is fortunately provided, coupled with vaccination of all who had been in contact with them, beyond doubt saved the county from a serious outbreak of this dread disease.

SCARLET FEVER.

The seat of greatest prevalence of Scarlet Fever, instead of being the industrial districts in the centre of the combination, as has been the case for several years, has moved to some of the more northern districts. The type of disease throughout the year has been mild. Out of the cases discovered by notification, or otherwise, 4·5 per cent. proved fatal.

DIPHTHERIA.

Diphtheria has been mostly in evidence in two neighbouring districts in the south of the combination, namely, Deudraeth and Ynyscynhaiarn. In these districts the rainfall is considerably above the average.

The type of disease during the year was upon the whole a severe one. Of the cases reported, 18·8 per cent. proved fatal.

MEETINGS OF SANITARY INSPECTORS.

During the year the Sanitary Inspectors of the district, 25 in number, have met on four occasions, in Carnarvon, Llandudno,

Festiniog and Bangor, for the purpose of increasing their efficiency in the public service. Lectures and papers on various subjects have been given, and demonstrations of modern appliances held.

These meetings which are carried on by the Inspectors themselves, aided by a few gentlemen interested in Sanitation, are the means of undoubted benefit to the community, and it is to be hoped that they will be continued and rendered still more useful.

Five of the Sanitary Inspectors of the district have recently severed their connection with the Public Health service, four of them after being public servants for many years. It appears to me much to be regretted if officials, especially after long service, do not receive encouragement to remain at their posts and to become increasingly efficient.

LLANRWST RURAL SANITARY DISTRICT.

Area	60,105 acres.
Population, Census 1881	7,950
„ „ 1891	7,413
Estimated population, June, 1896...	7,136

Birth-rate.—During the year 1896, 200 births were registered, being at the rate of 28·0 per 1000 of population. The birth-rate during 1895 was 22·5 per 1000 of population.

Death-rate.—There were 134 deaths registered from all causes, or at the rate of 18·7 per 1000 of population. The death-rate during 1895 was 21·8 per 1000 of population.

Zymotic Mortality.—The seven principal Zymotic diseases were the cause of 13 deaths. Of these, 4 were due to Diphtheria, 3 to Scarlet Fever, 3 to Measles, 1 to Enteric Fever, 1 to Whooping Cough, and 1 to Infantile Remittent Fever. The Zymotic Mortality is therefore 1·82 per 1000 of population. In 1895, the Zymotic Mortality was 0·97 per 1000.

Infantile Mortality.—Among infants under 1 year of age there were 31 deaths, being in the proportion of 155 per 1000 registered births. The Infantile Mortality in 1895 was at the rate of 191 per 1000 registered births.

Death-rate among persons aged 65 and upwards.—Among persons in this class there were 45 deaths, being at the rate of 6·3 per 1000 of population. The death-rate in this class during 1895 was 8·8 per 1000.

Death-rate from Phthisis.—Phthisis was the cause of 9 deaths, or at the rate of 1·2 per 1000 of population. During 1895, the Phthisis death-rate was 1·8 per 1000.

Death-rate from the Chief Respiratory Diseases.—These diseases were the cause of 20 deaths, or at the rate of 2·8 per 1000 of population, as compared with 2·2, which was the rate in 1895.

These statistics show that the birth-rate during the year was considerably over the average, and that the death-rate has declined from that of last year. The mortality from the principal Zymotic diseases and from the chief Lung diseases shows a rise, and the mortality amongst Infants and aged persons, and from Phthisis, shows an improvement.

Notification of Infectious Diseases.—During the year information was received with reference to 10 cases of Scarlet Fever, 6 of Diphtheria, 1 of Membranous Croup, and 1 of Enteric Fever. During 1895, 8 cases of infectious sickness were reported.

The cases of Scarlet Fever occurred in Llanrwst, Llanddewi, and Capel Garmon.

The adoption of the Infectious Diseases Notification and Prevention Acts by the Authority is really an urgent necessity. Considerable danger to the public has resulted through the ignorance as to the preventive treatment of infectious cases which at present exist in some quarters.

The Capel Garmon and Nebo schools had to be closed for a period owing to infectious disease.

In the town of Llanrwst a considerable number of sanitary improvements have been effected by the Authority during the year.

The water supply has received special attention. Some hundreds of new service pipes have been laid at a cost of about £200.

A weekly removal of house refuse is now carried out. Swine-keeping in the crowded parts of the town, which was the cause of great nuisance in some cases, has been discouraged. The workshops and bakehouses of the town have been specially inspected, and various sanitary requirements insisted on.

In the more rural portions of the district, the chief item of importance has been the provision of a water supply for the village of Pentrevoelas. This most useful work has been carried out by the landlord.

At the village of Nebo, Capel Garmon, works of water supply are being proceeded with at an estimated cost of £70, to be completed by June 1st.

Sanitary Inspector's Record for 1896.

Llanrwst Town.

No. of complaints received	Numerous.
,, inspections of houses or premises	300
,, orders given for the sanitary amendment of houses or premises	20

No. of houses or premises cleansed, repaired, or whitewashed	25
„ houses disinfected or supplied with disinfectants ...	22
„ house drains repaired, cleansed, or trapped ...	25
„ house drains ventilated	6
„ privies and W.C.'s new provided	6
„ „ „ repaired	27
„ W.C.'s supplied with water	40
„ of animals removed on account of being a nuisance ...	7
„ of houses closed as unfit for habitation	6

Rural Portion.

No. of complaints received	6
„ inspections of houses or premises	206
„ orders given for the sanitary amendment of houses or premises	89
No. of houses or premises cleansed, repaired, or whitewashed	26
„ houses disinfected, or supplied with disinfectants ...	12
„ privies—new provided	12
„ privies—repaired	14
„ W.C.'s supplied with water...	5
„ accumulations of manure and refuse removed ...	18
„ of animals removed on account of being a nuisance	8

BETTWSYCOED RURAL SANITARY DISTRICT.

Area	59,709 acres.
Population, Census 1881 ...	6,159
„ „ 1891	5,598
Estimated population, June, 1896	5,308

Birth-rate.—The births registered during the year were 130 in number, or at the rate of 24·4 per 1000 of population. During 1895 the birth-rate was 24·6 per 1000.

Death-rate.—The number of deaths registered from all causes was 96, which is at the rate of 18·0 per 1000 of population. During 1895, the death-rate was 20·5 per 1000.

Zymotic Mortality.—The principal Zymotic diseases were the cause of 5 deaths, being at the rate of 0·94 per 1000 of population, of these 5 deaths, 2 were caused by Whooping Cough, 1 by Enteric Fever, 1 by Diarrhœa, and 1 by Measles. During 1895, the Zymotic Mortality was 0·74 per 1000.

Infantile Mortality.—Among Infants under 1 year of age there were 13 deaths, or at the rate of 100 per 1000 registered births. During 1895, the Infantile Mortality was 174 per 1000 registered births.

Death-rate among Persons aged 65 and upwards.—Among persons at this period of life there were 28 deaths, which number is at the rate of 5·2 per 1000 of population, as compared with 7·2 per 1000, which was the rate in 1895.

Phthisis Death-rate.—To Phthisis were ascribed 9 deaths, or at the rate of 1·6 per 1000 of population. In 1895, the Phthisis death-rate was 0·93 per 1000.

Death-rate from the Chief Respiratory Diseases.—The chief Lung Diseases were the cause of 14 deaths, or at the rate of 2·6 per 1000 of population. The death-rate from these diseases during 1895 was 1·8 per 1000.

These statistics show that a low birth-rate prevailed during the year. Some improvement is seen in the general death-rate, which is chiefly due to a lessened mortality among infants and aged persons.

Infectious Diseases.—During the year information as to 6 cases of the more infectious diseases came to hand, namely, 5 Scarlet Fever and 1 Enteric Fever. During 1895, 8 cases of infectious sickness were discovered.

Most of the Scarlet Fever cases occurred in the parish of Maenan, and the case of Enteric Fever in Trefriw.

Besides these 6 cases, 53 cases of the less dangerous Zymotic diseases were discovered by the Sanitary Inspector. These were as follows:—In Dolwyddelen, 25 cases of Whooping Cough, 7 cases of Measles, and 3 cases of German Measles. In Yspytty, 9 cases of Measles; and in Trefriw, 9 cases of Measles. Great care was displayed by the Inspector in these outbreaks, and all possible precautions taken.

Dolwyddelen, Yspytty, Maenan, and Trefriw Schools had to be closed for various periods owing to these outbreaks.

A considerable amount of sanitary work has been executed during the year by the Authority. Byelaws with respect to New Streets and Buildings have been drawn up, and it is intended to adopt Byelaws to regulate Slaughter Houses, the removal of Nuisances, etc. A large number of premises have been inspected during the year by the Sanitary Inspector, and numerous improvements effected.

The water supplies of the villages have engaged especial attention. At Penmachno, auxiliary sources of supply have been secured with the satisfactory result that there is now an ample supply for the village. The extension of the pipes to the additional sources, at the cost of about £20, has increased the supply materially.

Various steps have also been taken by the Authority to prevent the pollution of streams by various deleterious matters, such as washings from lead mines, etc., with satisfactory results.

Sewerage.—The chief item of sewer construction during the year has been the extension of the sewer at Dolwyddelen, to serve a few outlying houses. At the village of Penmachno, considerable improvement has been effected to the sewers and drains.

Sanitary Inspector's Record for 1896.

No. of complaints received	14
„ inspections of houses and premises	627
„ orders given for the sanitary amendment of houses or premises	53
No. of houses or premises cleansed, repaired, or whitewashed ...	7
„ houses disinfected or supplied with disinfectants ...	32
„ house drains repaired, cleansed, or trapped	29
„ privies and W.C.'s—new provided ...	4 privies, 5 W.C.'s
„ privies and W.C.'s repaired	13
„ W.C.'s supplied with water...	17
„ houses supplied with a supply of water	6
„ accumulations of manure and refuse removed ...	5
„ animals removed on account of being a nuisance ...	8

DEUDRAETH RURAL SANITARY DISTRICT.

Area	81,369 acres.
Population, Census 1881 ...	9,298
,, ,, 1891 ...	8,561
Estimated population, June, 1896	8,180

Birth-rate.—There were registered during the year 228 births, being at the rate of 27·8 per 1000 of population. The birth-rate during 1895 was 26·6 per 1000.

Death-rate.—From all causes there were registered 158 deaths, or at the rate of 19·3 per 1000 of population. The death-rate in 1895 was 16·8 per 1000.

Zymotic Mortality.—Of the deaths, 17 were due to the seven principal Zymotics. Of these, 10 were due to Diphtheria, 3 to Enteric Fever, 3 to Measles, and 1 to Scarlet Fever. The Zymotic Mortality is therefore 2·07 per 1000 of population. In 1895, the Zymotic Mortality was 1·09 per 1000.

Infantile Mortality.—There were 47 deaths among infants under one year of age, which gives an Infantile Mortality of 206 per 1000 registered births, as compared with 122 per 1000 registered births, which was the rate during 1895.

Death-rate among persons aged 65 and upwards.—Among persons in this group there were 44 deaths, or at the rate of 5·3 per 1000 of population. In 1895, the death-rate among persons in this group was 5·2 per 1000.

Phthisis Death-rate.—18 of the deaths were occasioned by Phthisis, being at the rate of 2·2 per 1000 of population. During 1895, the Phthisis death-rate was 2·4 per 1000.

Death-rate from the chief Respiratory Diseases.—Twenty-four of the deaths were ascribed to the chief Lung Diseases, being at the rate of 2·9 per 1000 of population. The death-rate in this class during 1895 was 2·1 per 1000.

The birth-rate for the year was a comparatively high one for a Rural District. The general death-rate shows a rise upon that of last year, which is chiefly contributed to by a rise in the Zymotic Mortality, in the mortality among infants, and from the chief Lung Diseases. The Zymotic Mortality, although somewhat under the average for England and Wales, was nearly double that of 1895.

This rise was chiefly due to the extensive outbreak of Diphtheria, which has existed in the district throughout the year. The infantile mortality was considerably higher than it has been for several years.

Notification of Infectious Disease.—From this district 200 cases of infectious sickness were notified during the year, as follows :—

Diphtheria and Diphtheritic Sore Throat ...	142
Scarlet Fever	25
Erysipelas	15
Typhoid Fever	14
Membranous Croup	2
Puerperal Fever	2

Besides these, there were 11 cases of Measles.

During 1895, there were 104 cases of Infectious Disease notified.

The cases of Diphtheria occured throughout the year in Harlech, Penrhyndeudraeth, Talsarnau, Maentwrog, and also to a considerable extent in the country around. The disease showed evidence of being of a very infectious type, and seems to have spread in many cases from throat to throat through the usual channels of social communication. The most serious type of disease occured in and around Harlech, where insanitary conditions, no doubt, assisted in producing an increased virulence on the part of the Diphtheritic poison.

The Scarlet Fever cases were almost wholly in Harlech, where also the majority of the Typhoid Fever cases occurred. The defective drainage of the place, with the pollution of soil and air in close proximity to dwellings, and the pollution of the streams running through the place, have been sufficient cause for the spread of the disease.

The schools at Harlech, Talsarnau, and Maentwrog, had to be closed for various periods, owing to the outbreak of infectious disease among the scholars.

Sanitary Work.—A considerable amount of sanitary work has been executed during the year in this large district.

Water Supply. — A noteworthy improvement has been the carrying out of a scheme of water supply for the populous district of Upper Penrhyndeudraeth. The Portmadoc Water Company, after obtaining a guarantee from the Sanitary Authority for a reasonable amount of interest upon their outlay, have extended their water mains, so as to serve about 200 houses.

At the villages of Gellilydan (Maentwrog), Garreg (Llanfrothen), and Trawsfynydd, the public wells have been much improved and secured against surface pollution.

Sewerage.—At Upper Penrhyndeudraeth 50 houses have been served by the construction of about 300 yards of new sewers.

At Harlech, a sewer about 180 yards in length has been constructed to serve 18 houses, which have now been connected with the same. The Parish Council have been supplied with the plan and scheme for the sewerage of the place, which were prepared for the Local Government Board some years ago, and the Authority are now waiting for the observations of the local Councillors before moving further in the matter.

The proposed scheme of the Authority to serve a part of Trawsfynydd by means of a short length of new sewer would be a great improvement to this populous village.

Scavenging.—Progress has to be recorded in the very necessary work of scavenging the different villages. Those in which the Authority has arranged for regular scavenging are now in a much more cleanly and satisfactory condition than formerly.

At Harlech, a system of scavenging has been arranged for, by which all house refuse, etc., are carted away weekly. This great boon has been contracted for at the moderate price of £15 12s. 0d. per annum, which is, undoubtedly, money well spent.

The whole of the village of Penrhyndeudraeth is now scavenged for the sum of £25 per annum. Every part of the district is visited once a fortnight, and the work is performed before 9 a.m.

At Talsarnau the public ashpit is cleared by a neighbouring farmer.

For the village of Trawsfynydd seven public ashpits have been recently constructed, and are supposed to be removed by the neighbouring farmers, but this voluntary arrangement does not work so well as might be desired. To obtain the great boon of having solid refuse regularly and promptly removed from the vicinity of dwellings, the public money would be worthily expended.

At Maentwrog the contents of the public ashpits are removed regularly at the expense of the landlord.

The Sanitary Authority have now under consideration the further extension of sewers at Upper Penrhyndeudraeth. It is to be earnestly hoped that the great needs of Harlech for a thorough

sewering and for a safe water supply, will be soon met by the Authority. By taking advantage of a loan, so as to distribute the cost over a large number of years, the expense of this most neccssary work would not press heavily upon the community. There is no doubt but that the place would gain immensely in reputation as a pleasure resort, besides invaluable work being done in the direction of preventing illness and saving life.

Sanitary Inspector's Record for 1896.

No. of complaints received...	28
,, inspections of houses or premises	889
,, orders given for the sanitary amendment of houses or houses	186
No. of houses or premises cleansed, repaired, or whitewashed ...	85
,, houses disinfected or supplied with disinfectants ...	211
,, house drains repaired, cleansed, or trapped	57
,, house drains ventilated	2
,, privies and W.C.'s new provided	15
,, do., do., repaired	25
,, W.C.'s supplied with water	14
,, animals removed on account of being a nuisance ...	12
,, houses closed as unfit for habitation	3

GLASLYN RURAL SANITARY DISTRICT.

Area	42,387 acres.
Population, Census 1881 ...	3,447
„ „ 1891	3,003
Estimated population, June, 1896,	2,773

Birth-rate.—The number of births registered during the year was 89, being at the rate of 32·0 per 1000 of population. During 1895, the birth-rate was 34·4 per 1000.

Death-rate.—The number of deaths registered from all causes was 61, or at the rate of 21·9 per 1000 persons living. In 1895, the death-rate was 19·8 per 1000.

Zymotic Mortality.—As was the case in 1895, there was no death from a Zymotic cause during the year.

Infantile Mortality.—Twelve of the deaths were those of infants under one year of age, or in the proportion of 134 per 1000 registered births. During 1895, the Infantile Mortality was 113 per 1000 registered births.

Death-rate among persons aged 65 and upwards.—Among persons in this class there were 22 deaths, or at the rate of 7·8 per 1000 of population; as compared with 7·7 per 1000, which was the rate in 1895.

Death-rate from Phthisis.—Of the deaths, 6 were due to Phthisis, being at the rate of 2·1 per 1000 of population. During 1895, the Phthisis death-rate was 1·4 per 1000.

Death-rate from the chief Respiratory Diseases.—The chief Lung Diseases were the cause of 7 deaths, or at the rate of 1·5 per 1000 of population. In 1895, the death-rate in this class was 3·5 per 1000.

The vital statistics for this purely rural district show a high birth-rate, a general death-rate somewhat higher than the average, which is chiefly attributable to the death-rate among aged persons being higher than the average, and also to an increased number of deaths from the class known as "all other diseases." The continued absence of any Zymotic mortality is noteworthy.

Infectious Disease.—During the twelve months 24 notifications of infectious sickness were received, viz. :—

Scarlet Fever	14
Diphtheria	6
Erysipelas...	2
Enteric Fever	1
Puerperal Fever	1

During 1895, eight cases of infectious sickness were notified.

The cases of Scarlet Fever occurred chiefly in the villages of Rhyd-ddu and Prenteg, while the Diphtheria cases occurred singly, scattered irregularly through the district. Outbreaks of Measles and Whooping Cough also occurred in Rhyd-ddu and Beddgelert. The Rhyd-ddu, Nantgwynant, and Prenteg Schools had to be closed during June on account of infectious disease.

Sanitary Work.—A scheme for supplying the growing village of Rhyd-ddu with water has been prepared, and adopted by the Authority, but unfortunately the terms upon which one of the land-owners concerned will give his consent are considered so unreasonable and excessive that the scheme is at a standstill. It is greatly to be regretted that Sanitary Authorities do not yet possess sufficient powers, without going to great expense, to take water for domestic use—one of the first necessities of life—in spite of landowners such as this one. At present the Sanitary Authority do not feel justified in accepting the terms offered.

The Sewering of Rhyd-ddu.—This long standing neccessity has not yet been carried into effect. Negotiatons have been in progress between the three District Councils concerned, and are still pending.

The proposal to sewer Prenteg has not yet taken definite shape.

The only portion of the district sewered during the year is the small village of Bryntirion, Nantmor.

The village of Beddgelert has been regularly scavenged throughout the year, at the moderate expense of £10 8s. 0d. per annum. Every part of the village is visited weekly, and great improvement upon the former state of things has resulted.

Sanitary Inspector's Record for the year 1896.

No. of complaints received	8
„ inspections of houses or premises ...	150
„ orders given for the sanitary amendment of houses or premises	30

No. of houses or premises cleansed, repaired, or whitewashed		4
„ houses disinfected or supplied with disinfectants		15
„ drains repaired, cleansed, or trapped ...		12
„ privies and W.C.'s new provided and repaired		24
„ W.C.'s supplied with water		8
„ of animals removed on account of being a nuisance		2

LLEYN RURAL SANITARY DISTRICT.

Area	91,465 acres.
Population, Census 1881 ...	18,561
„ „ 1891 ...	17,632
Estimated population, June, 1896	17,152

Birth-rate.—During the year 1896 there were registered 388 births, being at the rate of 22·6 per 1000 of population. During 1895, the birth-rate was 22·7 per 1000.

Death-rate.—There were registered from all causes, 319 deaths, or at the rate of 18·5 per 1000 of population. The death-rate during 1895 was 17·9 per 1000.

Zymotic Mortality.—Of the deaths, 18 were due to the seven principal Zymotics, being at the rate of 1·04 per 1000 of population. Of these deaths, 10 were caused by Diphtheria, 4 by Enteric Fever, 2 by Whooping Cough, 1 by Scarlet Fever, and 1 by Measles. In 1895, the Zymotic Mortality was 1·27 per 1000.

Infantile Mortality.—Of infants under one year of age, there were 37 deaths, or in the proportion of 95 per 1000 registered births. The Infant Mortality during 1895 was 114 per 1000 registered births.

Death-rate among persons aged 65 and upwards.—There were 145 deaths among persons at this period of life, being at the rate of 8·3 per 1000 of population. During 1895, the death-rate in this class was 8·0 per 1000.

Phthisis Death-rate.—To Phthisis were attributed 33 deaths, or at the rate of 1·9 per 1000 of population. During 1895, the Phthisis death-rate was the same.

Death-rate from the chief Lung Diseases.—These diseases were the cause of 35 deaths, or at the rate of 2·0 per 1000 of population. During 1895, the death-rate from these diseases was 1·7 per 1000.

The vital statistics of the year were very similar to those of 1895. A low birth-rate prevailed, and a slight rise in the general death-rate took place, which was mostly due to the class of "all other diseases." The Zymotic Mortality was a low one, and was an improvement upon the rate of 1895. The infantile mortality was considerably lower than the average for the rest of the county. The proportion

of deaths among aged persons was, as usual, higher than the average for the rest of the county.

Notification of Infectious Disease.—There were notified during the year 87 cases of infectious sickness, which were as follows :—

Scarlet Fever	36
Diphtheria	31
Enteric Fever	10
Erysipelas	8
Membranous Croup	2

In 1895, 67 cases of infectious sickness were notified.

The cases of Scarlet Fever were mostly of mild type, and occured in the villages of Llanbedrog, Llanaelhaiarn, and Trevor. The mildness of type led the medical attendant in some of the cases to at first pronounce the disease to be Measles, and produced considerable delay in their notification.

The type of disease in most of the Diphtheria cases was a grave one, over 33 per cent. of the cases notified proving fatal. The district which was chiefly attacked by the disease was the neighbourhood of Llanengan. A few cases occured in the villages of Rhydyclafdy and Edeyrn. Of the Enteric Fever cases, several occurred at Llithfaen, and were tracable to Barmouth, whence a servant girl had come home ill.

The following schools had to be closed during the year, on account of infectious disease :—Plasgwyn, Edeyrn, Llanengan, and Trevor. As in past years, the beneficial effect of prompt closing of the village schools, especially in the case of outbreaks of Diphtheria, was very marked.

Sanitary Work.—A good deal of attention has been given by the Authority to the sanitation of the district. The water supply and drainage of some of the villages have been under consideration, and in several instances noteworthy improvements have been effected

Water Supply.—The village of Llanaelhaiarn, containing about 50 houses, has been provided with a standpipe supply, at a cost of about £70. At the village of Trevor and Llanystumdwy considerable improvements have been effected to the water supplies.

Sewerage.—At the village of Trevor, 50 yards of new sewer have been laid, to serve 10 houses. At Nevin, a new sewer 85 yards long has been laid to serve the urgent needs of part of the town. At

Llanaelhaiarn, a large pool which had formed through the damming back of surface water, and which was the cause of great discomfort to the residents, was satisfactorily drained after a great deal of delay.

Plans for the thorough sewering of Fourcrosses have been drawn up, but unfortunately have been objected to by the Parish Council on the score of expense. A modified and cheaper scheme has, however, been adopted by them. It is to be trusted that one or other will be carried into effect as soon as possible.

A large number of houses has been provided during the year with sanitary conveniences, which are still in a great many instances conspicious by their absence in this scattered rural district.

No arrangement seems to have been yet made to carry out a system of scavenging the larger villages, such as Nevin and Fourcrosses.

Sanitary Inspector's Record for the year 1896.

No. of complaints received	132
„ inspection of houses or premises ...	250
„ orders given for the sanitary amendment of houses or premises	98
„ houses or premises cleansed, repaired, or whitewashed	136
„ houses disinfected or supplied with disinfectants	62
„ house drains repaired, cleansed, or trapped	18
„ privies and W.C.'s new provided ...	25
„ „ „ repaired	36
„ accumulations of manure and refuse removed	60
„ animals removed on account of being nuisances	5

GWYRFAI RURAL SANITARY DISTRICT.

Area	70,443 acres.
Population, Census 1881 ...	30,245
„ „ 1891... ...	27,737
Estimated population, June, 1896	26,442

Birth-rate.—During the year 1896, 800 births were registered, being at the rate of 30·2 per 1000 of population. The birth-rate during 1895 was 27·6 per 1000 of population.

Death-rate.—There were 512 deaths registered from all causes, or at the rate of 19·3 per 1000 of population. The death-rate during 1895 was 20·0 per 1000 of population.

Zymotic Mortality.—The seven principal Zymotic diseases were the cause of 34 deaths. Of these, 7 were occasioned by Enteric Fever, 7 by Whooping Cough, 6 by Diarrhœa, 5 by Scarlet Fever, 5 by Measles, and 4 by Diphtheria. The Zymotic Mortality is therefore 1·28 per 1000 of population. During 1895, the Zymotic Mortality was 1·01 per 1000.

The deaths from Enteric Fever occurred in Penygroes, Portdinorwic, Talysarn, Ebenezer, and Pantglas. The deaths from Whooping Cough took place in Ebenezer, Clwtybont, and Penisa'r-waen. Deaths from Scarlet Fever occurred in Talysarn, Ebenezer, and Portdinorwic; and from Diphtheria in Rhyd-ddu, Llanddeiniolen, and Penygroes.

Infantile Mortality.—Among infants under one year of age there were 104 deaths, being in the proportion of 130 per 1000 registered births. The Infantile Mortality in 1895 was at the rate of 163 per 1000 registered births.

Death-rate among persons aged 65 and upwards.—Among persons in this class there were 171 deaths, being at the rate of 6·4 per 1000 of population. The death-rate in this class during 1895 was 6·1 per 1000.

Death-rate from Phthisis.—Phthisis was the cause of 61 deaths, or at the rate of 2·3 per 1000 of population. During 1895, the Phthisis death-rate was 2·0 per 1000.

Death-rate from the chief Respiratory Diseases. — These diseases were the cause of 66 deaths, or at the rate of 2·4 per 1000 of population, as compared with 2·8 per 1000, which was the rate in 1895.

The birth-rate for the year was a high one, being slightly higher than the average for England and Wales. The general death-rate shows an improvement upon that of 1895, which is chiefly due to a decreased mortality among infants and in the class of all other diseases. The Zymotic Mortality, though slightly above that of 1895, was considerably lower than that of England and Wales. It is gratifying to learn that the Zymotic Mortality in this populous district has greatly lessened during the last few years. In 1883 it was 2·37 per 1000, and in 1894 it was 1·83 per 1000. The infantile mortality shows a marked fall from that of 1895. The death-rate from Phthisis, as has been the case during several recent years, was somewhat above the average for the rest of the county.

Notification of Infectious Disease. — During the year 1896, 223 cases of infectious disease were notified, as follows :—

Scarlet Fever	137
Diphtheria	30
Typhoid Fever	24
Erysipelas	24
Continued Fever	4
Membranous Croup	2
Puerperal Fever	2

During 1895, there were 221 cases of infectious sickness notified.

The cases of Scarlet Fever chiefly occurred in Upper Llandwrog, Penygroes, Talysarn, Upper Clynnog, Rhyd-ddu, Waenfawr, Ebenezer, and Llanrug. The type of disease was, as a rule, mild. Only 3·6 per cent of the cases notified proved fatal.

Diphtheria cases occurred mostly in Rhyd-ddu, Llanddeiniolen, and Talysarn. About 13 per cent. of the cases notified terminated.

The cases of Typhoid Fever occurred, as a rule, singly. At Penygroes, several cases occurred within a small circle, the disease being, no doubt, assisted to spread by the insanitary conditions which exist at the spot.

Measles of a mild type was very prevalent in several parts of the district during the spring.

The following schools were closed during the year in consequence of infectious disease having broken out :—Pant Glas, Talysarn, Bryn Eryr (Llanrug), Cwmyglo, Bethel, Dinorwic, and Clynnog.

The sanitary requirements of the district are receiving an increasing amount of attention at the hands of the Authority.

Water Supply.—A deficient water supply has been the experience of several parts of the district. In the large villages of Talysarn, Penygroes, Bontnewydd, Rhostryfan, Cæsarea, Bwlchyllyn, Port-dinorwic, Waen Pentir, and Caeathraw has been the greatest scarcity. The scheme to supply the villages in the Nantlle Vale with water is, at last, within measurable distance of being carried into effect. The contract has now been let and the scheme will probably be completed well within the current year. The cost of this noteworthy scheme will be from £4000 to £5000.

As for the other villages named, although various schemes for improving the supply of water have been proposed, yet up to the present none have been carried into effect.

For the high lying districts of Cæsarea and Bwlchyllyn, an ingenious scheme to force water up to a height of 115 feet has been prepared by the Sanitary Inspector and approved of.

It is to be hoped that the Authority, in spite of the many difficulties in the way, will be able to obtain for these large populations the priceless boon of a pure and sufficient water supply. Much delay has arisen owing to the view held by the Authority, who, conscious of the enhanced value of house property when provision for an improved water supply is made, maintain that property owners should provide a proportion of the necessary cost.

Sewering.—New sewers have been constructed at Cæsarea and at Bontnewydd. The sewer at Waen Pentir has been extended a distance of 120 yards at a cost of £26. The small hamlet of Caerhos has been thoroughly drained by the owner.

The Authority have decided to sewer the village of Clynnog, but are waiting the County Council to contribute some of the cost.

No tangible progress has taken place in connection with the much needed sewering of the hamlets of Pentrecastell, Disgwylfa, and Rhyd-ddu (Gwyrfai portion).

At the villages of Llanllyfni, Talysarn, and Penygroes a considerable proportion of the houses is still unprovided with drains. It is to be hoped that these villages will be dealt with in a thorough

manner as soon as the new water scheme will allow progress to be made in this direction.

Among the smaller details of sanitary work of the year were the vaccinating of several persons who had come in contact with a case of Smallpox. Fortunately they were vaccinated in time and none of them developed the disease.

The slaughter houses and bakehouses of the district have been periodically inspected and found in a fair condition.

No arrangements for regularly scavenging the populous villages of the district have been made. If this necessary improvement were carried into effect by the Authority, a great boon would be conferred upon the public.

Sanitary Inspector's Record for the year 1896.

No. of complaints received	184
„ inspections of houses or premises ...	1051
„ orders given for the sanitary amendment of houses or premises ...	10
„ houses or premises cleansed, repaired, or whitewashed	6
„ houses disinfected or supplied with disinfectants	109
„ drains repaired, cleansed, or trapped	62
„ house drains ventilated	2
„ privies and W.C.'s new provided ...	18
„ „ „ repaired ...	30
„ accumulations of manure and refuse removed	69
„ animals removed on account of being a nuisance	12
„ houses closed as unfit for habitation...	2

DWYRAN RURAL SANITARY DISTRICT.

Area	15,252 acres.
Population Census 1881 ...	3,494
,, Census 1891 ...	3,171
Estimated population, June 1896 ...	3,004

Birth-rate.—The births registered during the year were 51 in number, or at the rate of 16·9 per 1000 of population. During 1895, the birth rate was 21·7 per 1000.

Death-rate.—The number of deaths registered from all causes was 36, which is at the rate of 11·9 per 1000 of population. During 1895, the death-rate was 16·4 per 1000.

Zymotic Mortality.—One death was ascribed to a Zymotic cause, namely, Measles. The Zymotic Mortality is therefore 0·33 per 1000 of population; as compared with 0·32 per 1000, which was the rate during 1895.

Infantile Mortality.—Among infants under 1 year of age there were 8 deaths, or at the rate of 156 per 1000 registered births. During 1895, the Infantile Mortality was 166 per 1000 registered births.

Death-rate among persons aged 65 and upwards.—Among persons at this period of life there were 11 deaths, which number is at the rate of 3·6 per 1000 of population, as compared with 7·2 per 1000, which was the rate during 1895.

Phthisis Death-rate.—To Phthisis were ascribed six deaths, or at the rate of 1·9 per 1000 of population. In 1896, the Phthisis death-rate was the same.

Death-rate from the chief Respiratory Diseases.—The chief Lung Diseases were the cause of 4 deaths, or at the rate of 1·3 per 1000 of population. The death-rate from these diseases during 1895 was 3.2 per 1000.

During the year both the birth-rate and the general death-rate were exceptionally low. The infantile mortality was somewhat higher than usual, and the death-rate among aged persons and from the chief respiratory diseases was considerably lower.

Infectious Disease.—During the 12 months 5 cases of infectious sickness were notified, viz :—

Scarlet Fever ...	... 2
Erysipelas ...	... 2
Puerperal Fever ...	... 1

In 1895, there were 7 cases notified.

The outbreak of Scarlet Fever was one in which the infection had been carried from Colwyn Bay. Strict measures of isolation were adopted, and fortunately the disease did not spread.

In common with all other districts in Anglesea, this district experienced an extensive outbreak of Measles during the spring, The schools at Newborough and Llangaffo had to be closed for several weeks. The disease was of a mild type and only one case terminated fatally.

The most important sanitary improvement carried out during the year has been an extension of the sewer at Brynsiencyn. A length of 140 yards of 9 inch pipes has been laid with a small settling tank. This work has effectually done away with the gross nuisance which previously existed from discharging the sewage at the road side.

At Llangaffo several houses, which were defective in several respects, have been taken in hand by the Authority, and various sanitary requirements insisted on. A properly constructed sewer would be a great boon for this village, so that the drainage might be promptly removed to a sufficient distance from the village and dealt with on suitable land.

No work of importance has been carried out with reference to the water supply of the district. The village of Newborough still suffers from a defective supply.

Sanitary Inspector's Record for 1896.

No. of complaints received	10
,, inspections of houses ...	155
,, orders given for the sanitary amendment of houses or 2remises	22
,, accumulations of manure and refuse removed	18
,, animals removed on account of being a nuisance...	2

OGWEN RURAL SANITARY DISTRICT.

Area	44,042 acres.
Population, Census 1881 ...	7,716
„ Census 1891... ...	7,226
Estimated population, June, 1896	6,973

Birth-rate.—There were registered during the year 173 births, being at the rate of 24·8 per 1000 of population. The birth-rate during 1895 was 23·6 per 1000.

Death-rate.—From all causes there were registered 144 deaths, or at the rate of 20·6 per 1000 of population. The death-rate in 1895 was 19·3 per 1000.

Zymotic Mortality.—Of the deaths, 17 were due to the principal Zymotic disease. Diphtheria was the cause of 9 deaths, Measles 3 deaths, Typhoid Fever 2 deaths, Scarlet Fever 2 deaths, and Whooping Cough 1 death. The Zymotic Mortality for 1896 was thus 2·43 per 1000, as compared with 0·71 per 1000 which was the Zymotic Mortality in 1895.

Infantile Mortality.—There were 23 deaths among infants under one year of age, which gives an Infantile Mortality of 132 per 1000 registered births, as compared with 150 per 1000 which was the rate during 1895.

Death-rate among Persons aged 65 and upwards.—Among persons in this group there were 50 deaths, or at the rate of 7·1 per 1000 of population. In 1895, the death-rate among persons in this group was 5·9 per 1000.

Phthisis Death-rate.—17 of the deaths were occasioned by Phthisis, being at the rate of 2·4 per 1000 of population. During 1895, the Phthisis death-rate was 1·4 per 1000.

Death-rate from the chief Respiratory Diseases.—17 of the deaths were ascribed to the chief Lung Diseases, being at the rate of 2·4 per 1000 of population. The death-rate in this class during 1895 was 1·4 per 1000.

The birth-rate and the general death-rate of the year show a rise upon the rate of 1895, almost identical in amount. The rise in the death-rate was chiefly contributed to by an increased mortality from Zymotics and respiratory diseases, and among aged persons.

The fatal cases of Diphtheria occurred in Glasinfryn and its immediate vicinity and also in Llandegai. The two fatal cases of Enteric Fever occurred in Mynydd Llandegai and in Llanllechid village and the two deaths from Scarlet Fever in Penrhosgarnedd.

Infectious Diseases.—During the year, 82 cases of the usual notifiable diseases were reported, besides 5 cases of Measles.

These 82 case were as follows :—

Scarlet Fever	40
Diphtheria	28
Typhoid Fever	13
Erysipelas	1

During 1895, 35 cases of infectious sickness were reported.

The outbreak of Scarlet Fever chiefly attacked Penrhosgarneddd, Minffordd, and Capel Graig. The disease was of a very infectious nature, though mild. In one house seven persons were attacked,

Two persons were prosecuted by the Authority for wilfully exposing a person in an infectious state, and a penalty inflicted.

Two serious outbreaks of Diphtheria occurred during the year. One occurred in Glasinfryn and its neighbourhood, and the other in a cluster of houses in Llandegai parish. In both outbreaks the disease appeared to be spread from throat to throat through the medium of attendance at school, as a rule.

Cases of Enteric Fever occurred in Coedyparc, Portdinorwic, Tregarth, Llandegai Mountain, Llanllechid village, and Glasinfryn.

An outbreak of Measles of a serious type occurred in the Capel Graig district during the month of December.

Of these cases, several were removed to the Bangor Isolation Hospital. The removal of these cases from crowded houses and from places where there was especial danger, was the means of doing a great amount of good.

Sanitary Work.—The Authority have now appointed a Sanitary Inspector who devotes the whole of his time to the Public Health duties alone. This arrangement has been in force during the last three months of the year.

It should be mentioned also that for the Penrhyn Estate, to which a considerable portion of the district belongs, a trained engineer has been engaged, part of whose duties consists in disin-

fecting houses after infectious cases, and in remedying any sanitary defects at the expense of the estate.

Water Supply.—At Douglas Hill, 600 yards of main have been laid supplying 8 houses, and at Tregarth 300 yards of water main have been laid to supply 6 houses.

Sanitary Inspector's Record for the three months ending December 31st, 1896.

No. of complaints received	7
,, inspections of houses or premises	107
,, orders given for the sanitary amendment of houses or premises	4
No. of houses or premises cleansed, repaired, or whitewashed	Numerous.
,, houses disinfected or supplied with disinfectants ...	27
,, house drains repaired, cleansed, or trapped	3
,, house drains ventilated	2
,, privies and W.C.'s new provided	3
,, privies repaired	7
,, accumulations of manure or refuse removed ...	4
,, animals removed on account of being a nuisance ...	2

AETHWY RURAL SANITARY DISTRICT.

Area	36,424 acres.
Population, Census 1881 ...	8,942
„ „ 1891 ...	8,831
Estimated population, June, 1896	8,773

Birth-rate.—The number of births registered during the year was 237, being at the rate of 27·0 per 1000 of population. During 1895, the birth-rate was 23.6 per 1000.

Death-rate.—The number of deaths registered from all causes was 165, or at the rate of 18·8 per 1000 persons living. In 1895, the death-rate was 17·6 per 1000.

Zymotic Mortality.—Nine deaths were caused by the seven principal Zymotics, being at the rate of 1·02 per 1000 of population. Of these deaths, 3 were caused by Whooping Cough, 2 by Scarlet Fever, 2 by Enteric Fever, 1 by Diarrhœa and 1 by Measles. In 1895, the Zymotic Mortality was 0.22 per 1000.

Infantile Mortality.—25 of the deaths were those of infants under 1 year of age, or in the proportion of 105 per 1000 registered births. During 1895, the Infantile Mortality was the same.

Death-rate among persons aged 65 and upwards.—Among persons in this class there were 66 deaths, or at the rate of 7·5 per 1000 of population, as compared with 7·6 per 1000 which was the rate in 1895.

Death-rate from Phthisis.—Of the deaths, 16 were due to Phthisis, being at the rate of 1·8 per 1000 of population. During 1895, the Phthisis death-rate was 1·3 per 1000.

Death-rate from the Chief Respiratory Diseases.—The chief Lung Diseases were the cause of 21 deaths, or at the rate of 2·3 per 1000 of population. In 1895, the death-rate in this class was 1·8 per 1000.

The birth-rate which prevailed during the year was considerably higher than usual. The rise which took place in the death-rate was chiefly contributed to by a slightly increased mortality from Zymotic and Lung Diseases. The infantile mortality was as usual a low one.

Infectious Disease.—During the year information was received of 25 cases of infectious sickness, as follows:—

Scarlet Fever	17
Diphtheria	6
Typhoid Fever	2

During 1895, eight cases of infectious sickness were discovered.

The outbreak of Scarlet Fever occurred during November and December in the parish of Llandegfan, and necessitated the closing of the Llandegfan National School for several weeks.

The Diphtheria cases occurred in an isolated farmhouse in Llangristiolus and in three cottages in Llandegfan.

In March simultaneous outbreaks of Whooping Cough and Mumps occurred in Trefdraeth parish, and necessitated the closing of the Trefdraeth National School.

Towards the end of May, the wave of Measles, which passed over Anglesey during the year, reached Gaerwen and eventually Llanddaniel. A large number of cases resulted in these villages, and the three schools had to be closed for a long period.

The villages of Malltdraeth, Bethel and Llanddona have been specially attended to by the Authority during the year. Numerous sanitary defects such as absence of privy accommodation, damp and earthen floors, insufficient ventilation, absence of drainage, and nuisances from keeping animals have been attempted to be remedied, and a considerable amount of improvement has been effected. Specimens of the dilapidated and insanitary rural cottage are still too numerous in this district.

At Bethel a sewer about 50 yards in length has been constructed to serve 8 houses. The sewage of these houses is now discharged in a suitable spot on to land instead of as previously on to the road side.

The Authority has recently decided to extend the main sewer at Llanfair P. G. a distance of 62 yards.

Sanitary Inspector's Record for 1896.

No. of complaints received	40
„ inspections of houses or premises	320
„ orders given for the sanitary amendment of houses or premises (including notices served)	204

No. of houses or premises cleansed, repaired, or whitewashed	34
„ houses disinfected or supplied with disinfectants ...	19
„ house drains repaired	6
„ privies—new provided	26
„ privies—repaired	10
„ accumulations of manure and refuse removed ...	50

CONWAY RURAL SANITARY DISTRICT.

Area	26,133 acres.
Population, Census 1881 ...	4,121
„ „ 1891	4,770
Estimated population, June, 1896	5,105

BIRTH-RATE.—During the year 1896, there were registered 140 births, being at the rate of 27·4 per 1000 of population. During 1895, the birth-rate was 28·9 per 1000.

DEATH-RATE.—There were registered from all causes 77 deaths, or at the rate of 15·0 per 1000 of population. The death-rate during 1895 was 21·0 per 1000.

ZYMOTIC MORTALITY.—Of the deaths, 9 were attributed to the principal Zymotic diseases, being at the rate of 1·76 per 1000 of population Of these, 5 were caused by Scarlet Fever, 3 by Diphtheria and 1 by Whooping Cough. During 1895, the Zymotic Mortality was 1·78 per 1000.

INFANTILE MORTALITY.—Of infants under one year of age there were 13 deaths, or in the proportion of 92 per 1000 registered births. The Infant Mortality during 1895, was 157 per 1000 registered births.

DEATH-RATE AMONG PERSONS AGED 65 AND UPWARDS.—There were 26 deaths among persons at this period of life, being at the rate of 5·0 per 1000 of population. During 1895, the death-rate in this class was 7·5 per 1000.

PHTHISIS DEATH-RATE.—To Phthisis were attributed 6 deaths, or at the rate of 1·1 per 1000 of population. During 1895, the Phthisis death-rate was 0·99 per 1000.

DEATH-RATE FROM THE CHIEF LUNG DISEASES.—These diseases were the cause of 6 deaths, or at the rate of 1·1 per 1000 of population. During 1895, the death-rate from these diseases was 2·1 per 1000.

The birth-rate during the year was a fairly high one for a rural district. The general death-rate shows a satisfactory lowering, which is chiefly due to a lessened mortality among infants, aged persons, and from the chief respiratory diseases. The Zymotic Mortality shows no material change.

Notification of Infectious Disease.—During the twelve months, 104 notifications of infectious sickness were notified from this district, as follows :—

Scarlet Fever	86
Diphtheria	12
Typhoid Fever	6

During 1895, 47 cases of infectious sickness were reported.

The wave of Scarlet Fever extended over a considerable area, affecting chiefly the villages in the northern portion of the district. The villages of Llysfaen, Penmaen, Old Colwyn, Penrhynside, and Llangwstenin suffered considerably. In consequence of the mildness of the disease it was found extremely difficult to obtain isolation of the patients for a sufficient period. About 5·8 per cent. of the cases notified proved fatal.

Most of the cases of Diphtheria occurred in the village of Roewen.

Of the Typhoid cases, three occurred in Penrhynside, being the last cases of the epidemic which prevailed there about the end of 1895. The others were isolated cases, and fortunately were able to be well isolated.

Sanitary Work.—The most important improvement effected in this district during 1896, has been the completion of the sewerage scheme for Penrhynside. This rapidly growing village, built in an irregular manner near the top of a steep hill, has been provided with a complete system of sewers, at a cost of about £3000. This cost was, to a great extent, due to the distance the sewer had to be laid, in order to discharge into the sea. About 100 houses are served and are now being connected to the sewers.

The extension of the branch main from the Cowlyd water system to this village has been completed during the year, and now supplies an ample amount of water, instead of the scanty and intermittent supply which was previously the case.

The cost of laying this branch main the necessary distance of about two miles, has been about £400.

The village of Penrhynside, and the growing district of Penybont, are now regularly scavenged by contract.

Ashpits are now being abolished in these places, by replacing them with moveable receptacles.

GLAN CONWAY RURAL SANITARY DISTRICT.

Area ...	...	... 8,768 acres.
Population, Census, 1881		... 1,639
„ „ 1891		... 1,544
Estimated population, June, 1896		1,495

Birth-rate.—There were registered during the year 36 births, being at the rate of 24·0 per 1000 of population. The birth-rate during 1895 was 26·5 per 1000.

Death-rate.—From all causes there were registered 19 deaths, or at the rate of 12·7 per 1000 of population. The death-rate in 1895 was 25·2 per 1000.

Zymotic Mortality.—As was the case in 1895, there was no death from a Zymotic cause during 1896.

Infantile Mortality.—Among infants under one year of age there was 1 death, or in the proportion of 27 per 1000 registered births; as compared with 325 per 1000 registered births, which was the rate during 1895.

Death-rate among persons aged 65 and upwards.—Among persons in this group there were 13 deaths, or at the rate of 8·6 per 1000 of population. In 1895, the death-rate among persons in this group was 5·3 per 1000.

Phthisis Death-rate.—One death was ascribed to Phthisis, which gives a mortality of 0·66 per 1000 of population. During 1895, the Phthisis death-rate was 1·3 per 1000.

Death-rate from the chief Respiratory Diseases.—There were no deaths caused by the chief Lung Diseases. During 1895, the death-rate from these diseases was 2·6 per 1000.

The great difference in some of the vital statistics of this district during 1896 as compared with 1895, is an indication of the frequent and irregular variation which is to be observed in the statisticts of small populations. The general death-rate has jumped down to one half of that of 1895, and the infantile mortality is only one twelfth of that of 1895.

Notification of Infectious Disease.—During the year 20 notifications of infectious sickness were notified, viz :—

Scarlet Fever	17
Typhoid Fever	1
Membranous Croup	1
Puerperal Fever	1

In 1895, no cases of infectious sickness were reported.

The outbreak of Scarlet Fever was of a mild type, and occurred in isolated cottages upon the highlying portions of the district, and to some extent in Glanconway. The case of Typhoid Fever was that of a servant girl who came home ill from a neighbouring town.

With the exception of an improvement effected to the main sewer of Glan Conway and the remedying of sanitary defects in some of the houses in which Scarlet Fever occurred, no noteworthy sanitary work has been carried out during the year.

CONWAY AND GLANCONWAY RURAL SANITARY DISTRICTS.

Sanitary Inspector's Record for the Year 1896.

No. of complaints received	39
„ inspections of houses or premises	340
„ orders given for the sanitary amendment of houses or premises	10
No. of houses or premises cleansed, repaired, or whitewashed	4
„ houses disinfected, or supplied with disinfectants ...	70
„ house drains repaired, cleansed, or trapped ...	5
„ privies and W.C.'s new provided	10
„ W. C's repaired	6

YNYSCYNHAIARN URBAN SANITARY DISTRICT.

Area	5,543	acres.
Population, Census 1881 ...	5,506	
„ „ 1891 ...	5,224	
Estimated population, June, 1896	5,078	

Birth-rate.—The births registered during the year were 116 in number, or at the rate of 22·8 per 1000 of population. During 1895, the birth-rate was 24·4 per 1000.

Death-rate.—The number of deaths registered from all causes was 103, which is at the rate of 20·2 per 1000 of population. During 1895, the death-rate was 19·1 per 1000.

Zymotic Mortality.—The principal Zymotic diseases were the cause of 13 deaths, being at the rate of 2·56 per 1000 of population. Of these, 12 were caused by Diphtheria, and 1 by Diarrhœa. During 1895, the Zymotic Mortality was 0·19 per 1000 of population.

Infantile Mortality.—Among infants under one year of age there were 13 deaths, or at the rate of 112 per 1000 registered births. During 1895, the Infantile Mortality was 136 per 1000 registered births.

Death-rate among persons aged 65 and upwards.—Among persons at this period of life, there were 30 deaths, which number is at the rate of 5·9 per 1000 of population, as compared with 6·4 per 1000, which was the rate in 1895.

Phthisis Death-rate.—To Phthisis were ascribed 9 deaths, or at the rate of 1·7 per 1000 of population. In 1895, the Phthisis death-rate was 2·3 per 1000.

Death-rate from the chief Respiratory Diseases.—The chie Lung Diseases were the cause of 15 deaths, or at the rate of 2·9 per 1000 of population. The death-rate from these diseases during 1895 was 2·3 per 1000.

A comparatively low birth-rate prevailed throughout the year. The general death-rate shows some rise, which is chiefly due to the increased Zymotic mortality, occasioned by an epidemic of Diphtheria at Tremadoc. The serious nature of the outbreak is seen in the fact that, out of the 67 cases notified, 12 cases, or 17·9 per cent, terminated fatally.

Notification of Infectious Disease.—During the twelve months 79 cases of infectious disease were notified, viz. :—

Diphtheria	67
Scarlet Fever	7
Erysipelas	4
Membranous Croup	1

During 1895, 60 cases of infectious sickness were notified.

The great majority of the cases of Diphtheria occurred during the prevalence of a serious outbreak in Tremadoc during the last quarter of the year. The first case reported during the year was that of a girl taken ill in May. No further cases were notified until October 4th, after which the disease rapidly spread in spite of all efforts made to stop its progress. The origin of the outbreak is doubtless to be traced to several sore throats which are now known to have existed in the village before the outbreak in October. There is reason to believe that these sore throats were mild cases of Diphtheria, and that through their medium the infection has been handed on in an unbroken chain from the previous cases of Diphtheria in this and the neighbouring districts. The unusually wet autumn, coupled with the situation of the village which lies in a low flat situation upon a clayey subsoil, brought about a water-logged condition of the ground, which, no doubt, assisted in preparing for the outbreak. The insanitary surroundings and uncleanly interiors of many of the houses, no doubt, also assisted in spreading the disease. The influence of school attendance upon this outbreak was a marked one. The Tremadoc Board School was closed for two prolonged periods. In order to carry out preventive measures in this outbreak it was found necessary to assist the Sanitary Inspector in his ardous and unremitting labours by securing the services of trained nurses, who performed excellent work in spite of great disadvantages. One nurse contracted the disease in a severe form, but fortunately recovered. This outbreak clearly showed how essential it is that districts should be provided with isolation hospitals before outbreaks of infectious disease occur. An important place like Portmadoc which is constantly exposed to importations of dangerous infectious disease must be considered as being without the chief instruments to combat infection unless an insolation hospital and an efficient disinfector are in readiness.

Sanitary Work.—From the Inspector's record it will be seen that a large amount of work has been executed during the year.

The Water Company has laid down 500 yards of new mains, so as to cope with the increasing needs of the district.

SEWERAGE.—66 yards of new sewer have been laid. A large number of house drains were repaired, and new W. C's provided.

SCAVENGING.—The systematic scavenging of the town has been in force during the year. 2080 loads have been removed by the Authority's staff.

The shipping is regularly inspected by the Sanitary Inspector, and as a rule the vessels are found in a fair condition of sanitation.

Sanitary Inspector's Record for the year 1896.

No. of complaints received		18
„ inspections of houses or premises	...	1916
„ orders given for the sanitary amendment of houses or premises		168
„ houses or premises cleansed, repaired, or whitewashed		24
„ houses disinfected or supplied with disinfectants		90
„ house drains repaired, cleansed, or trapped		154
„ house drains ventilated		10
„ privies and W.C.'s new provided	...	45
„ „ „ repaired		72
„ W.C.'s supplied with water		16
„ accumulations of manure and refuse removed		2080 loads.
„ animals removed on account of being nuisances		8
„ vessels inspected during the year	...	108

CRICCIETH URBAN SANITARY DISTRICT.

Area	471 acres.
Population, Census 1881 ...	1,108
„ „ 1891	1,410
Estimated population, June 1896 ...	1,566

Birth-rate.—There were registered during the year 25 births, being at the rate of 15·9 per 1000 of population. The birth-rate during 1895 was 21·4 per 1000.

Death-rate.—From all causes there were registered 25 deaths, or at the rate of 15·9 per 1000 of population. Of these, 4 were stated to be visitors. The remaining 21 deaths were at the rate of 13·4 per 1000 of population, which is therefore the general death-rate among residents. During 1895 the death-rate among residents was 22·7 per 1000.

Zymotic Mortality.—One death was due to one of the seven principal Zymotics, viz:—Scarlet Fever. The Zymotic Mortality was therefore 0·63 per 1000 of population. During 1895, the Zymotic Mortality was 0·65 per 1000.

Infantile Mortality.—Two of the deaths were those of infants under one year of age, or in the proportion of 80 per 1000 registered births. In 1895, the Infantile Mortality was 242 per 1000 registered births.

Death-rate among Persons aged 65 & upwards.—Among persons in this class there were 10 deaths or at the rate of 6·3 per 1000 of population ; as compared with 7·1 per 1000, which was the rate in 1895.

Death-rate from Phthisis.—Of the deaths, 4 were due to Phthisis, being at the rate of 2·5 per 1000 of population. During 1895, the Phthisis death-rate was 1·3 per 1000.

Death-rate from the chief Respiratory Diseases.—The chief Lung Diseases were the cause of 2 deaths, or at the rate of 2·5 per 1000 of population. In 1895, the death-rate in this class was 3·2 per 1000.

The birth-rate and the general death-rate were both unusually low. The lowering of the death-rate was chiefly due to a greatly lessened number of deaths among infants, and in the class of all other diseases. The Zymotic Mortality was also a low one.

Infectious Disease.—During the year 1896, 11 notifications of infectious disease were received, as follows :—

Scarlet Fever	7
Diphtheria	3
Erysipelas	1

In 1895, 6 notifications of infectious disease were received.

The cases of Scarlet Fever occurred irregularly from April to September.

Sanitary Work.—

Water Supply.—The proposed scheme to purchase the water-works from the private company at present holding it, has been abandoned. A few houses have been supplied with water during the year.

Regulations under the Dairies Cowsheds and Milkshops Order have been adopted during the year.

Scavenging.—The Authority now arrange for the systematic removal of house refuse during the summer months.

Sanitary Inspector's Record for the year 1896.

No. of complaints received	45
,, inspections of houses or premises ...	400
,, houses disinfected or supplied with disinfectants	60
,, house drains repaired, cleansed, or trapped...	2
,, privies and W.C.'s repaired	6

PWLLHELI URBAN SANITARY DISTRICT.

Area	1,087 acres.
Population, Census 1881 ...	3,242
,, Census 1891... ...	3,231
Estimated population, June, 1896	3,225

Birth-rate.—During the year 1896, there were registered 77 births, being at the rate of 23·8 per 100 of population. During 1895, the birth-rate was 25·7 per 1000.

Death-rate.—There were registered from all causes, 53 deaths, or at the rate of 16·1 per 1000 of population. Of these deaths, 6 were of persons dying in the Union Workhouse. If these be deducted, the corrected resident death-rate becomes 14·5 per 1000.

During 1895, the gross general death-rate was 25·7 per 1000 of population, and the corrected death-rate 23·8 per 1000.

Zymotic Mortality. — Of the deaths, 5 were caused by the principal Zymotic diseases. Two were due to Scarlet Fever, 2 to Diphtheria, and 1 to Whooping Cough. The Zymotic Mortality for 1895 is therefore 1·55 per 1000 of population, as compared with 0·61 per 1000, which was the Zymotic Mortality during 1895.

Infantile Mortality.—Of infants under one year of age, there were 9 deaths, or in the proportion of 116 per 1000 registered births. The Infantile Mortality during 1895, was 216 per 1000 registered births.

Death-rate among persons aged 65 and upwards.—There were 21 deaths among persons at this period of life, being at the rate of 6·5 per 1000 of population. In 1895, the death-rate in this class was 7·7 per 1000.

Phthisis Mortality. — To Phthisis were attributed 3 deaths, being at the rate of 0·93 per 1000 of population. During 1895 the Phthisis death-rate was 2·1 per 1000.

Death-rate from the chief Respiratory Diseases.—These diseases were the cause of 10 deaths, or at the rate of 3·1 per 1000 of population. During 1895 the death-rate from these diseases was 4·9 per 1000.

The birth-rate during 1896 was rather a low one. The death-rate shows a considerable lowering upon that of the previous three

years. This reduction is chiefly due to a lessened mortality among infants and aged persons, fewer deaths from Lung Diseases, and in the class of "all other diseases."

Notification of Infectious Diseases. — During the year 20 cases of infectious disease were notified, as follows :—

Scarlet Fever	14
Typhoid Fever	3
Diphtheria	2
Membranous Croup	1

In 1895, 11 cases of infectious disease were notified.

The cases of Enteric Fever occurred in a crowded cottage, with insanitary accumulations of refuse in its vicinity. The infection appears to have been brought from Fourcrosses, where an outbreak had occurred.

The Scarlet Fever cases occurred in some of the worst crowded parts of the town, and in much frequented houses with businesses attached, such as laundry work, meat stores, etc. Fortunately, the disease did not take on an epidemic form.

Sanitary Work.—The sewerage system is now complete and in working order. On account of the flat levels of the main sewers, frequent flushing must be resorted to.

Water Supply.—An important step has to be recorded in reference to the water supply of the town. This undertaking, which previously was in the hands of a private company, has now been purchased by the Authority, for £7,750. The public will benefit in several respects by thus obtaining control of the water supply.

Another noteworthy feature has been the erection of a public slaughter house. A modern slaughter house has been built in a convenient spot, at a cost of £700. This step was rendered imperative through the inevitable danger to the health of the public, which arose from the existence of private slaughter houses in close proximity to dwellings in some of the most crowded parts of the town. In one case, a room which formed part of a dwelling house, was used for slaughtering, and in another, the animals to be slaughtered had to be taken in through the shop. Some of the butchers, however, with little thought for the public good, stubbornly refused to abandon their defective and insanitary slaughter house. The Authority were compelled to take proceedings under section 114 of the Public Health Act, 1875, against all the private slaughter-houses of the town to remove the danger to health, and

obtained a verdict which will materially assist in administering the Public Health laws in future.

Housing of the Working Classes.—Progress has been made in improving the sanitary condition of the older houses of the town, and it is the determination of the Authority to deal with this difficult problem in a thorough manner.

CARNARVON URBAN SANITARY DISTRICT.

Area	2,214 acres.
Population, Census 1881 ...	10,258
„ „ 1891... ...	9,804
Estimated population, June, 1896	9,570

Birth-rate.—There were registered during the year 231 births, being at the rate of 24·1 per 1000 of population. The birth-rate during 1895 was 27·2 per 1000.

Death-rate.—From all causes there were registered 197 deaths, or at the rate of 20·5 per 1000 persons living. Of these, [illegible] with a especial persons from outside the district who died in public institu[illegible] and are these be deducted, the death-rate among residents proper[illegible]es 19·9 per 1000 persons living. In 1895, the gross death-rate was 20·3, and the death-rate among residents was 19·2 per 1000.

Zymotic Mortality.—14 deaths were due to the Zymotic diseases. Of these, 6 were due to Measles, 3 to Enteric Fever, 2 to Diarrhœa, 1 to Smallpox, 1 to Diphtheria, and 1 to Whooping Cough. The Zymotic Mortality is therefore 1·46 per 1000 of population. The Zymotic Mortality during 1895 was 1·03 per 1000.

Infantile Mortality.—There were 27 deaths among infants under one year of age, which gives an Infantile Mortality of 116 per 1000 registered births; as compared with 140 per 1000 registered births which was the rate during 1895.

Death-rate among persons aged 65 and upwards.—Among persons in this group there were 48 deaths, or at the rate of 5·0 per 1000 of population. In 1895, the death-rate among persons in this group was 6·1 per 1000.

Phthisis Death-rate.—26 of the deaths were occasioned by Phthisis, being at the rate of 2·7 per 1000 of population. During 1895, the Phthisis death-rate was 1·7 per 100.

Death-rate from the chief Respiratory Diseases.—The chief Lung Diseases were the cause of 32 deaths, or at the rate of 3·3 per 1000 of population. In 1895, the death-rate in this class was 4·6 per 1000.

The birth-rate shows a considerably drop from that of last year, and was practically the same as the low birth-rate of 1893 and 1894.

The general death-rate was practically the same as that of last year. The mortality from Zymotic diseases and from Phthisis was somewhat higher, and that among infants, aged persons, and from the chief Lung Diseases somewhat lower than the average.

Notification of Infectious Disease.—During the twelve months, 29 cases of infectious diseases were notified, besides 1 case of Measles.

These 29 cases were as follows :—

Diphtheria	8
Erysipelas	8
Scarlet Fever	5
Typhoid Fever	5
Smallpox	2
Membranous Croup	1

In 1895, 30 cases of infectious disease were notified.

Of the infectious outbreaks, the most serious was that of Smallpox. The disease was introduced into the town in a most careless manner by a marine engineer, from the steamer "North Cambria." It appears that on this vessel an outbreak of Smallpox occurred, and several of the crew (including all suspicious cases) were detained in the Workhouse Hospital at Limerick. The engineer above-mentioned was discharged from the hospital, and a certificate given him that he could safely mix with the public, yet when seen a few days afterwards, he was in a distinctly infectious state. His mother, unfortunately, contracted the disease, to which she succumbed. The Isolation Hospital rendered invaluable service to the public in dealing with this outbreak.

The other cases of infectious disease which were notified, occurred irregularly throughout the year, and were enabled to be kept from bursting out into an epidemic. One patient, who was suffering from Scarlet Fever, but not attended by any medical man at the time, was discovered attending Sunday School, thereby exposing the health and lives of scores of children to serious danger. Legal proceedings were taken against him for breach of the Infectious Diseases (Notification) Act, 1889, and a penalty inflicted.

Of these cases, 5 were treated in the Isolation Hospital.

During June, an outbreak of Measles occurred in the town, and threatened to develop into a general epidemic. The day Schools

were promptly closed for a period of five weeks, and the outbreak gradually cleared.

Sanitary Work.—Considerable improvement has been effected to the water supply of the higher levels of the town, by the laying of about 750 yards of new main, at a cost of £300. A large number of houses has been supplied with a new or improved water service.

The systematic inspection of the district, which is being continually carried out by the Sanitary Inspector, has been productive of much good.

The Authority have paid a great amount of attention to the sanitation of the town. The Public Health Amendment Act, 1890, has been adopted, and bye-laws are being considered with a view to adoption. The Sanitary Committee has paid especial attention to the housing of the working-classes of the town, and are earnestly endeavouring to find a solution of this difficult and important problem. It is hoped that the Authority will make a generous use of the powers entrusted by statute to them, in order to improve the sanitary environment of the poor who are, for the most part, unable to obtain any improvement of their surroundings. The evils resulting from insanitary dwellings, not only harm those that live in them, but the whole community must inevitably suffer to some extent, either in health, morals, or reputation. It is only right therefore that the community should willingly undergo the expense necessary to enable this great and pressing question to be satisfactorily dealt with.

The Public Slaughterhouse of the district is subject to daily inspection, and has been maintained in a satisfactory manner. The number of animals slaughtered during the year was as follows:—Cattle, 1382; Pigs, 2075; Calves, 753; Sheep, 8776. Total, 12,986.

The Bakehouses, Licensed Cowsheds, and Common Lodging-houses have been kept under regular supervision. The latter have given a great deal of trouble during the year.

The workshops of the town, 43 in number, have been inspected, and various defects remedied.

Sanitary Inspector's Record during the year 1896.

No. of complaints received	252
,, houses or premises inspected	1459
,, houses or premises &c., cleansed, repaired, or white-washed	17

No. of houses disinfected or supplied with disinfectants ...	36
„ house drains repaired, cleansed, or trapped	104
„ house drains ventilated	10
„ W.C.'s repaired	174
„ houses supplied with a supply of water	127
„ legal proceedings taken	1
„ accumulations of manure and refuse removed ...	10

MENAI BRIDGE URBAN SANITARY DISTRICT.

Area	825 acres.
Population, Census 1881 ...	1,619
„ „ 1891	1,675
Estimated population, June, 1896,	1,704

Birth-rate.—The births registered during the year were 35 in number, or at the rate of 20·5 per 1000 of population. During 1895, the birth-rate was 22·3 per 1000.

Death-rate.—The number of deaths registered from all causes was 35, which is at the rate of 20·5 per 1000 of population. During 1895, the death-rate was 24·1 per 1000.

Zymotic Mortality.—The principal Zymotic diseases were the cause of 4 deaths, being at the rate of 2·34 per 1000 of population. Of these, 3 were caused by Whooping Cough and 1 by Diphtheria. In 1895, the Zymotic Mortality was Nil.

Infantile Mortality.—Among infants under 1 year of age there were 6 deaths, or at the rate of 171 per 1000 registered births. During 1895, the Infantile Mortality was 52 per 1000 registered births.

Death-rate among persons aged 65 and upwards.—Among persons at this period of life there were 10 deaths, which number is at the rate of 5·8 per 1000 of population, as compared with 7·6 which was the rate in 1895

Phthisis Death-rate.—To Phthisis were ascribed 8 deaths, or at the rate of 4·6 per 1000 of population. In 1895, the Phthisis death-rate was 2·3 per 1000.

Death-rate from the chief Respiratory Diseases.—The chief Lung Diseases were the cause of 2 deaths, or at the rate of 1·1 per 1000 of population. The death-rate from these diseases during 1895 was 4·1 per 1000.

The birth-rate which prevailed during the year was a low one. The death-rate was considerably lower than that of 1895, the improvement being due to fewer deaths among aged persons and from the class of "all other diseases." The Zymotic mortality was above the average, chiefly owing to three deaths from Whooping Cough. The

Infantile mortality and the mortality from Phthisis were above the average.

Infectious Disease.—During the year 1896, 16 notifications of infectious disease were notified, viz:—

Scarlet Fever	15
Diphtheria	1

In 1895, one case of infectious disease was notified

The outbreak of Scarlet Fever occurred during the autumn and was of a mild type. Great difficulty was experienced in arranging for isolation of the patients as they were members of large families.

The want of an efficient disinfecting apparatus for dealing with articles of clothing, bed clothes, etc., was felt greatly during this outbreak.

The case of Diphtheria rapidly proved fatal. Strict precautionary measures were adjoined, and fortunately the disease did not spread.

An improvement has been carried out at the source of the water supply. Iron pipes have been substituted for earthenware pipes at a cost of about £125 to convey the water, thereby saving a considerable quantity of water, which was formerly lost through leakage. The supply of water throughout the year has been much better than that of previous years.

The sewers have been maintained in good order and several new drains have been connected.

The nuisance and discomfort arising from the want of a system of scavenging have been increasingly felt, and the Authority have had under consideration various schemes for effecting an improvement upon the present system of allowing the house occupiers to dispose of their house refuse as best they can. It is satisfactory to find that the systematic scavenging of the town has been arranged for by the Council, and it is to be hoped that all householders will take advantage of this beneficial arrangement in every possible way. The best receptacle for house refuse is a galvanised iron covered bin.

The only remaining slaughterhouse and the bakehouses have been kept in a satisfactory manner.

The Authority have now decided to put the provisions of the Dairies, Cowsheds and Milkshops Order in force in their district and have adopted the Model Regulations under this Order.

Sanitary Inspector's Record for the year 1896.

No. of inspections of houses or premises	60
„ houses supplied with disinfectants	10
„ W.C.'s new provided	12
„ W.C.'s connected with main sewer	1
„ privies converted into W.C.'s	3
„ animals removed on account of being a nuisance ...	1

BANGOR URBAN SANITARY DISTRICT.

Area	...	...	1,208 acres.
Population, Census 1881		...	9,005
,, ,, 1891		...	9,892
Estimated population, June, 1896			10,350

Birth-rate.—There were registered during the year 286 births, being at the rate of 27·6 per 1000 of population. The birth-rate during 1895 was 30·7 per 1000.

Death-rate.—From all causes there were registered 208 deaths. Of these, 8 were persons from outside districts, dying in the public institutions or elsewhere in the town. The gross death-rate was therefore 20·0 per 1000 of population, and the death-rate among residents proper was 19·3 per 1000. In 1895, the gross death-rate was 18·7, and the death-rate among residents was 18·2 per 1000.

Zymotic Mortality.—Of the deaths, 36 were attributed to the Zymotic Diseases. Of these, 13 were caused by Measles, 8 by Scarlet Fever, 5 by Whooping Cough, 4 by Diphtheria, 1 by Enteric Fever and 1 by Continued Fever. The Zymotic Mortality for 1896 was therefore 3·47 per 1000 of population. In 1895, the Zymotic Mortality was 0.97 per 1000.

Infantile Mortality.—There were 39 deaths among Infants under 1 year of age, which gives an Infantile Mortality of 136 per 1000 registered births; as compared with 110 per 1000 registered births which was the rate during 1895.

Death-rate among persons aged 65 and upwards.—Among persons in this group there were 49 deaths, or at the rate of 4·7 per 1000 of population. In 1895, the death-rate among persons in this group was 5·4 per 1000.

Phthisis Death-rate.—21 of the deaths were occasioned by Phthisis, being at the rate of 2·0 per 1000 of population. During 1895, the Phthisis death-rate was 1·7 per 1000.

Death-rate from the chief Respiratory Diseases.—The chief Lung Diseases were the cause of 18 deaths, or at the rate of 1·7 per 1000 of population. During 1895, the death-rate in this class was 2·7 per 1000.

As has been the case for some years, the birth-rate was a comparatively high one. The general death-rate shows a slight rise, which is more than accounted for by the increased mortality from Zymotic causes. It should be noted, however, that half the Zymotic Mortality was occasioned by the infectious diseases which are most difficult to check, viz :—Measles and Whooping Cough. The mortality among Infants though higher than that of 1895, was below the average for England and Wales.

Notification of Infectious Disease.—During the 12 months, 295 notifications of Infectious Disease were notified, as follows:—

Scarlet Fever	241
Diphtheria	22
Erysipelas	17
Enteric Fever	13
Continued Fever ...	1
Puerperal Fever	1

During 1895, 58 cases of Infectious Disease were notified.

The outbreak of Scarlet Fever which obtained a strong foothold in the town at the close of the year continued to be more or less general throughout the year. Fortunately the disease continued to be of a mild type, as shown by the fact that only 3·3 per cent. of the cases notified proved fatal.

This mildness of the type has beyond doubt to a great extent been the cause of the persistence of the outbreak. In several instances no medical man was called in during the illness, until one or other of the sequelae of Scarlet Fever, such as peeling of the skin or dropsy revealed the true state of affairs. Several cases were discovered where great disregard of the most ordinary precautions was shown. The occupier of one house although repeatedly cautioned not to do so, persisted in selling milk from the house, while several children lay ill of Scarlet Fever. At the hearing of the case before the magistrates, the offence was practically admitted, but the bench would not convict as actual contact with the infected person by the person selling the milk was not proved.

Two of the larger schools had to be closed for a period, owing to increased prevalence of the disease.

During July, about the time that other neighbouring districts were similary affected, an outbreak of Measles occurred in the town. As there was reason to expect a rapid spread of the disease, all the Schools of the town were closed by the Authority for a period. The

effects of this step, both upon the outbreak of Scarlet Fever, and upon that of Measles, was a markedly beneficial one. During the week ending July 13th, on which date the Schools were closed, 12 notifications of Scarlet Fever were received. During the four following weeks, the number of notifications received was, respectively 2, 1, 3, and 0.

175 patients suffering from Scarlet Fever, were treated in the Isolation Hospital during the year, being equal to 73 per cent. of the cases notified. It is pleasing to find that a very general willingness to isolate patients in hospital, has replaced, to a great extent, the suspicion with which it was at first regarded in some quarters. One case had to be removed to hospital on a magistrates' order. The administration of the hospital has been improved in various particulars. The Chairman of the Sanitary Committee is the medical superintendent, and a permanent matron and nurse have been appointed. Telephone communication now exists between the hospital and the town.

Sanitary Work of the year.

Water Supply.—The supply of water to all parts of the borough has been ample and of good quality throughout the year. Several extensions of the water mains have been made, and it is calculated that 98 per cent. of the houses in the borough are now supplied from the mains. An interesting series of observations by the Surveyor has revealed the fact that the average daily consumption of water in a group of private houses, with a population of over 300, was about 5 gallons per head, while in some institutions the average consumption was over 45 gallons per head. A new main has been laid to supply the Isolation Hospital and the village of Minffordd, with a population of about 120. To raise the water to these high levels, recourse has been had to a wind-motor, which pumps the water from the mains into a reservoir with sufficient storage for fourteen days. This method has acted very satisfactorily, and may be recommended to be used for villages and places in similar circumstances. The total cost of the scheme was about £350.

Sewerage.—Part of the main sewer, which previously consisted of earthen-ware pipes, has been replaced by iron pipes, at a cost of £30. Short lengths of sewer extension have been laid in several directions. Numerous house drains have been relaid by the staff of the Authority. In my opinion it is well for Sanitary Authorities to undertake this class of work. The Asphyxiator has proved most useful in testing old and new drains.

House Accommodation.—Several new streets have been laid out, and building has been brisk during the year. 39 houses have been certified by the Surveyor, but most of these houses have been houses of too high a rental for the ordinary workingman. The Authority has had under special consideration the important problem of the housing of the working classes. The demand for houses suitable for workingmen's families is a very keen and growing one, and as private enterprise is unable, or unwilling to provide this class of house, it has been felt by the Authority that it will be advisable ere long to provide this accomodation, so as to lessen the crowding which tends to ensue with its inevitable danger to health With this in view, it has been decided to adopt Part III. of the Housing of the Working Classes Act, 1890, so as to have power to provide a number of suitable and sanitary houses.

Slaughter Houses.—Special attention has been paid to the ten slaughter houses in the borough, and various improvements have been effected. New copies of the Bye-laws have been supplied to each.

Common Lodging-houses.—The three common lodging houses are in a fair condition, and are regularly inspected. Surprise visits have been paid at night. Three persons have been summoned for keeping common lodging houses without being registered.

Scavenging.—Attempts have been made to remove the present depot for town refuse, but without success. It is felt that a destructor will meet the case. In order to enable the officials to carry out the scavenging of the town in a systematic manner, it would be an advisable proceeding if each house were provided with a covered galvanised bin. If this were carried into effect, all middens might be abolished, which would be a great boon.

BETHESDA URBAN SANITARY DISTRICT.

Area	...	...	899 acres.
Population Census 1881		...	6,969
„ Census 1891	...		5,799
Estimated population, June 1896		...	5,195

Birth-rate.—During the year 1896 there were registered 167 births, being at the rate of 32·1 per 1000 of population. During 1895, The birth-rate was 29·1 per 1000.

Death-rate.—There were registered from all causes 131 deaths, or at the rate of 25·2 per 1000 of population. The death rate during 1895 was 22·2 per 1000.

Zymotic Mortality.—Of the deaths, 11 were caused by the seven principal Zymotics. Of these, 6 were due to Whooping Cough, 2 to Diphtheria, 1 to Scarlet Fever, 1 to Enteric Fever, and 1 to Diarrhoea. The Zymotic Mortality is therefore 2·11 per 1000 of population. During 1895, the Zymotic Mortality was 0·56 per 1000.

Infantile Mortality.—Of infants under one year of age there were 24 deaths, or in the proportion of 143 per 1000 registered births. The Infant Mortality during 1895 was 200 per 1000 registered births.

Death-rate among pesons aged 65 and upwards.—There were 46 deaths among persons at this period of life, being at the rate of 8·8 per 1000 of population. During 1895, the death-rate in this class was 6·2 per 1000.

Phthisis Death-rate.—To Phthisis were attributed 10 deaths, or at the rate of 1·9 per 1000 of population. During 1895, the Phthisis death-rate was 2·4 per 1000.

Death-rate from the chief Lung Diseases.—These diseases were the cause of 17 deaths, or at the rate of 3·2 per 1000 of population. During 1895, the death-rate from these diseases was 2·8 per 1000.

As has been the case in recent years, the birth-rate during 1896 was a high one. The general death-rate was considerably over the average. The rise in the death-rate was partly due to an increased mortality from Zymotic causes, and among aged persons, but more particularly to an increased mortality in the class of "all other diseases."

Infectious Diseases.—During the year 20 cases of infectious disease came to my knowledge. These were as follows:—

Enteric Fever	10
Diphtheria	4
Scarlet Fever...	4
Erysipelas	2

During 1895, five cases of infectious diseases were reported.

The outbreak of Enteric Fever was limited to the district of Caellwyngrydd. The ten cases occurred at intervals during the first half of the year, and the infection was no doubt imported into the district some months previous to the first case being discovered. In one case the channel of infection was through nursing a patient and in some other cases it was probable that the infection was conveyed from a shop where a case occurred.

The cases of Diphtheria occurred in close proximity to each other in the district known as Braichmelyn and at the same time as a similar outbreak in a neighbouring part of the rural district. The disease was of a serious type and was no doubt spread to some extent by attendance at school.

Sanitary Work.—

Water Supply.—At the intake improvements have been effected to the method of straining the water in order to remove as large a quantity as possible of the peat which is in evidence after storms.

The County School and another house have been provided with a supply of water by laying a length of 180 yards of branch piping.

Sewerage.—A portion of the new sewer 140 yards long has been laid during the year. The improvement of the main sewer has been under consideration by the Authority but no radical alteration has been effected.

Sewage Farm. — Several improvements have been carried out at the sewage farm during the year and it is now in fair working order.

Improvement of the slaughterhouses of the district has been attempted in several particulars, and one slaughterhouse has been declared unfit for the purpose of slaughtering.

It would be greatly to the advantage of the district and of the butchers if a model slaughterhouse were provided in a convenient situation, and at the proper distance from dwellings.

A suitable piece of land for the disposal of house refuse would be much appreciated by the residents and would enable the Author-

ity to put a stop to the practice of tipping refuse into the river Ogwen.

A considerable number of minor sanitary improvements has been effected during the year. Some house owners have shown great delay in providing neccessary requirements for their houses.

Sanitary Inspector's Record during the Year 1896.

No. of complaints received	10
„ inspections of houses or premises	154
„ orders given for the sanitary amendment of houses or premises	6
No. of houses or premises cleansed, repaired, or whitewashed	13
„ houses disinfected or supplied with disinfectants ...	36
„ house drains repaired, cleansed, or trapped ...	5
„ privies and W.C.'s new provided	7
„ privies and W.C's repaired	4
„ W.C.'s supplied with water	5
„ accumulations of manure and refuse removed ...	1
„ of animals removed on account of being a nuisance	9 pigs.

LLANFAIRFECHAN URBAN SANITARY DISTRICT.

Area	4,434 acres.
Population, Census 1881 ...	2,041
,, ,, 1891 ...	2,407
Estimated population, June, 1896	2,596

Birth-rate.—There were registered during the year 70 births, being at the rate of 26·9 per 1000 of population. The birth-rate during 1895 was 21·4 per 1000.

Death-rate.—From all causes there were registered 37 deaths, or at the rate of 14·2 per 1000 of population. Of these, 3 were deaths of non-residents. The remaining 34 deaths were at the rate of 13·0 per 1000, which was therefore the death-rate among residents. In 1895, the gross death-rate was 15·6 per 1000 of population, and the resident death-rate was 14·0 per 1000.

Zymotic Mortality.—3 of the deaths were caused by the principal Zymotic Diseases. Of these, 2 were due to Whooping Cough and 1 to Measles. The Zymotic Mortality for 1896 was therefore 1·15 der 1000 of population. In 1895, the Zymotic Mortality was 0.39 per 1000.

Infantile Mortality.—There were 7 deaths among infants under 1 year of age, or in the proportion of 100 per 1000 registered births; as compared with 125 per 1000 registered births, which was the rate of Infantile Mortality during 1895.

Death-rate among persons aged 65 and upwards.—Among persons at this period of life there were 10 deaths, or at the rate of 3 8 per 1000 of population. In 1895, the death-rate among persons in this class was 5·4 per 1000.

Phthisis Death-rate.—Two of the deaths were occasioned by Phthisis, being at the rate of 0·77 per 1000 of population. During 1895, the Phthisis death-rate was 2·3 per 1000.

Death-rate from the chief Respiratory Diseases.—Three of the deaths were ascribed to the chief Lung Diseases, being at the rate of 1·1 per 1000 of population. The death-rate in this class during 1895, was 3·9 per 1000.

The birth-rate during the year was low. The death-rate was also a low one, showing an improvement upon even the death-rate of 1895. Though a slight rise is observed in the Zymotic Mortality, fewer deaths have occurred among infants and aged persons, while to Phthisis and the chief Lung Diseases fewer deaths were ascribed.

Notification of infectious disease.—During the year 1806, two cases of Infectious Disease were notified, viz:—1 of Scarlet Fever, and 1 of Erysipelas. In 1895, one case of infectious disease was notified.

An outbreak of German Measles of mild type occurred in October. A large number of children were attacked, but none of the cases proved fatal. The schools were closed by the Authority for five weeks, and the outbreak thereupon rapidly declined.

Sanitary Work.—A considerable number of sanitary improvements have been effected by the Authority during 1896. Negotiations with the view of purchasing the waterworks have been entered into, and it is to be hoped that the water supply of the district will be in their hands before long. Twenty four houses have been newly supplied with water, about 200 yards of service pipes having been laid.

Sewerage.—Progress has been made in the draining and sewering of the district. Two new branch sewers have been laid during the year, and 94 new house drains have been constructed and connected with the main sewer.

Regular scavenging of the district is now carried out, and all refuse removed to a spot about half a mile from the village.

The bye-law of the Authority which prohibits swine from being kept within 60 feet of a dwelling house has been insisted on in spite of considerable opposition, and several nuisances arising from swine keeping have been abated.

Sanitary Inspector's Record for 1896.

No. of complaints received	22
,, inspections of houses or premises	146
,, orders given for the sanitary amendment of houses or premises	84
,, houses or premises cleansed, repaired, or whitewashed	28
,, houses disinfected, or supplied with disinfectants ...	22
,, house drains repaired, cleansed, or trapped ...	30

No. of house drains ventilated		94
„ privies and W.C.'s new provided		25
„ do., do., repaired		30
„ W.C.'s supplied with water...		
„ houses supplied with water		24
„ accumulations of manure and refuse removed	...	24
„ animals removed on account of being a nuisance	...	9
„ houses closed as unfit for habitation		1

PENMAENMAWR URBAN SANITARY DISTRICT.

Area	3,819 acres.
Population, Census 1881 ...	2,122
„ „ 1891 ...	2,710
Estimated population, June, 1896	3,014

Birth-rate.—The number of births registered during the year was 68, being at the rate of 22·2 per 1000 of population. During 1895, the birth-rate was 29·1 per 1000.

Death-rate.—From all causes, 40 deaths were registered, being at the rate of 13·2 per 1000 of population. Of these, 6 were stated to be visitors. The remaining 34 deaths were at the rate of 11·2 per 1000 of population, which is, therefore, the death-rate among residents. The gross death-rate during 1895, was 19·6 per 1000, and the death-rate among residents, 19·2 per 1000.

Zymotic Mortality.—As in 1895, there were no deaths attributed to a Zymotic cause during 1896.

Infantile Mortality.—Of infants under one year of age, there were 7 deaths, or in the proportion of 102 per 1000 registered births. The Infantile Mortality during 1895, was 116 per 1000 registered births.

Death-rate among persons aged 65 and upwards.—Among persons in this class there were 11 deaths, or at the rate of 3·6 per 1000 of population, as compared with 7·1 per 1000, which was the rate in 1895.

Death-rate from Phthisis. — Of the deaths, 3 were due to Phthisis, being at the rate of 0·99 per 1000 population. During 1895, the Phthisis death-rate was 1·3 per 1000.

Death-rate from the chief Respiratory Diseases. — These diseases were the cause of 6 deaths, or at the rate of 1·9 per 1000 of population. In 1895, the death-rate from the chief Lung Diseases was 1·6 per 1000.

A low birth-rate and an unusually death-rate prevailed during 1896. A low rate of mortality is observed at all the age periods and from all diseases. The absence of any mortality from Zymotic causes is worthy of note.

Notification of Infectious Disease.—During the twelve months, 7 cases of infectious disease were notified, as follows :—6 of Scarlet Fever, and 1 of Enteric Fever. During 1895, two cases of infectious disease were notified.

Fortunately, none of these infectious cases terminated fatally. Some of the Scarlet Fever cases occurred in small cottages, in the most crowded part of the district, and it is a matter for surprise that more cases did not occur.

The case of Enteric Fever was that of a young settsman, who, possibly, contracted the disease while on a visit to Liverpool. He was well isolated and no further cases occured.

The need for an isolation hospital was keenly felt in dealing with some of these cases. The Authority have now, after a long search, succeeded in finding a suitable plot of ground upon which to erect a small isolation hospital. The sanction of the Local Government Board to a loan for this purpose has been applied for, and it is to be hoped that the Authority will be able to proceed with this most necessary work without delay.

Plans to erect 73 new houses were approved of by the Authority during the year, and building is rapidly proceeding. Of the houses being erected, a larger proportion than in the past consists of houses suitable for workingmen's families. It is pleasing to find that private enterprise is thus providing house accommodation for those who most need it. At present, considerable crowding exists, which, with the present good condition of the industry of the district, tends to become more acute.

Water Supply.—It is intended to commence constructing the proposed new storage reservoir on the River Gyrach without delay. I would strongly recommend that the water supply of the district be taken entirely from the mountain stream, without making use of any water from the old water-works. About 630 yards of new water mains have been laid during the year.

Sewerage.— The proposed scheme to sewer the low lying portion of the district so as to abolish the present cesspools has not yet been carried into effect. The growing village of Capelulo has not yet been provided with its much needed sewer.

About 829 yards of new house drains have been laid during the year.

Scavenging.—No special arrangements have been made for the scavenging of the district. This very necessary and important work should be carried out by the Authority.

The beneficial results obtained in neighbouring health resorts where regular scavenging is carried out and where each house has been provided with a galvanized iron bin by the Authority should encourage the District Council to adopt the same system.

Sanitary Inspector's Record During the year 1896.

No. of inspections of houses or premises	233
,, baths—new provided	5
,, W.C's—new provided	34
,, ventilating pipes provided	26
,, yard gullies do.	37
,, brick inspection chambers, do.	11
,, old pan closets removed	6
,, prives converted into W.C's	8

CONWAY URBAN SANITARY DISTRICT.

Area	3,449 acres.
Population, Census 1881 ...	3,254
„ „ 1891	3,442
Estimated population, June 1896 ...	3,539

Birth-rate.—The births registered during the year were 126 in number, or at the rate of 35·6 per 1000 of population. During 1895, the birth-rate was 36·0 per 1000.

Death-rate.—The number of deaths registered from all causes was 72 in number, which is at the rate of 20·3 per 1000 persons living. Of these, 20 were persons from outside the district dying in the Union Workhouse. If these were deducted, a corrected death-rate of 14·6 per 1000 is obtained.

The general death-rate for 1895 was 26·9 per 1000, and the death-rate among residents 24·1 per 100.

Zymotic Mortality.—One death was ascribed to a Zymotic cause, namely, Diphtheria. The Zymotic Mortality for 1895 was therefore 0·28 per 1000 of population, as compared with 0·56 per 1000 which was the rate during 1895.

Infantile Mortality.—Seven of the deaths were those of infants under 1 year of age, or in the proportion of 55 per 1000 registered births. During 1895, the Infantile Mortality was 251 per 1000 registered births.

Death-rate among Persons aged 65 and upwards.—Among persons at this period of life there were 24 deaths, which number is at the rate of 6·7 per 1000 of population, as compared with 7·1 per 1000 which was the rate during 1895.

Phthisis Death-rate.—To Phthisis were ascribed 7 deaths, or at the rate of 1·9 per 1000 of population. In 1895, the death-rate from Phthisis was 1·1 per 1000.

Death-rate from the chief Respiratory Diseases.—Three of the deaths were due to the chief Lung Diseases, being at the rate of 0·84 per 1000 of population. The death-rate in this class during 1895 was 2·8 per 1000.

The birth-rate during the year was maintained at practically the same high level as that of the previous three years. In the general death-rate there is seen a great improvement, which is due in great

part to the uncommonly low mortality among infants. The Zymotic Mortality and the death-rate from the chief Lung Diseases also show a decided lowering, and the death-rate from Phthisis shows a slight rise.

Infectious Diseases.—During the year 1896, 67 notifications of infectious disease were notified, viz:—

Scarlet Fever	61
Enteric Fever	2
Erysipelas	2
Continued Fever	1
Puerperal Fever	1

In 1895, one case of infectious disease was notified.

The outbreak of Scarlet Fever, which was of mild type, occurred during the months of June, July, August and September. The Deganwy and Tywyn districts were considerably affected as well as the town proper. None of the cases terminated fatally, although the disease was of a markedly infectious nature. Some of the cases occurred in small houses with very limited accommodation, and it was keenly felt that it was impossible to properly deal with the outbreak, on account of there being no isolation hospital in the district to which patients might be properly removed. In one instance a breach of the Factory and Workshops Act, 1895, was committed by the mother of children suffering from Scarlet Fever recklessly taking articles to be washed while Scarlet Fever existed in the house. Legal proceedings were taken by the Authority and a penalty inflicted.

The record of sanitary work executed in the borough of Conway during 1896, is a long one.

Water Supply.—From the Cowlyd system an ample supply has been available for all parts of the town. A considerable number of the houses which have been built of recent years in the outlying portions of the district, have been supplied with water. New mains have been laid to serve Penybont, Marl Lane, Albert Drive, Llanrhos, Marine Terrace, Deganwy, Gyffin Road, the Morfa, &c. Machno Terrace has also been provided with a supply of water. The total length of mains laid is about five miles.

Sewerage.—New sewers of a total length of about 220 yards have been constructed to serve Upper and Lower Watkin Street, Back Ogwen Terrace, Victoria Terrace, and Rose Place Court. Progress has been made in the work of converting the midden privies of the town into W.C.'s.

The outlaying village of Gyffin, and the rapidly growing district of Penybont, are still without their much needed sewer, and consequently a large and increasing number of houses have to resort to cesspools. Plans showing extensive schemes of sewerage for the Gyffin and Penybont districts have been prepared by the Surveyor, and submitted to the Local Government Board, and it is to be earnestly hoped that the work will soon be carried out.

Scavenging.—The town and its outskirts are now regularly scavenged by the Authority's staff. The large insanitary middens previously seen are being abolished, and moveable receptacles of galvanized iron or wood are being substituted. The outlying districts are scavenged by contract, but in my opinion this class of work should be directly undertaken by the Authority.

Housing of the Working Classes.—Notices to close several insanitary houses have been served upon the owners, who have undertaken to close them as soon as the tenants can find other houses.

The district has not yet been provided with an isolation hospital, although the Authority has endeavoured to obtain suitable land for this purpose in various quarters.

Sanitary Inspector's Record for the year 1896.

No. of complaints received	39
„ inspections of houses or premises ...	584
„ orders given for the sanitary amendment of houses or premises	103
„ houses or premises cleansed, repaired, or whitewashed	6
„ houses disinfected or supplied with disinfectants	49
„ house drains repaired, cleansed, or trapped	100
„ house drains ventilated	6
„ privies and W.C.'s new provided ...	28
„ „ „ repaired	59
„ accumulations of manure and refuse removed	2
„ animals removed on account of being nuisances	9
„ legal proceedings taken	9

LLANDUDNO URBAN SANITARY DISTRICT.

Area	2,835 acres.
Population, Census 1881 ...	4,807
„ Census 1891... ...	7,348
Estimated population, June, 1896	8,661

Birth-rate.—During the year 1896 there were registered 195 births, being at the rate of 22·5 per 1000 of population. In 1895, the birth-rate was 23·9 per 1000.

Death-rate.—There were registered from all causes 151 deaths, or at the rate of 17·4 per 1000 of population. Of these 22 were stated to be visitors. The remaining 129 deaths were at the rate of 14·1 per 1000 which was therefore the death-rate among residents. In 1895, the gross death-rate was 17·4 per 1000 of population, and the resident death-rate 14·3 per 1000.

Zymotic Mortality.—21 of the deaths were caused by the principal Zymotic diseases, or at the rate of 2·42 per 1000 of population. Of these, 12 were caused by Diphtheria, 4 by Enteric Fever, 3 by Whooping Cough, and 2 by Diarrhœa. The Zymotic Mortality during 1895 was 2·14 per 1000.

Infantile Mortality.—There were 28 deaths among infants under one year of age, or in the proportion of 143 per 1000 registered births. In 1895, the Infantile Mortality was 233 per 1000 registered births.

Death-rate among persons aged 65 and upwards—Among persons in this class there were 26 deaths, or at the rate of 3.0 per 1000 of population. During 1895, the death-rate was 3·2 per 1000.

Phthisis Death-rate.—To Phthisis were ascribed 8 deaths, or at the rate of 0·92 per 1000 of population. In 1895, the Phthisis death-rate was 1·6 per 1000.

Death-rate from the chief Respiratory Diseases.—These diseases were the cause of 28 deaths, or at the rate of 3·2 per 1000 of population. Of these deaths four were visitors, so that the death-rate from the chief Lung Diseases among residents was 2·7 per 1000. In 1895, the death-rate in this class was 1·9 per 1000.

The birth-rate, as in most health resorts, was a low one, and was practically identical with that of the previous four years. The gross death-rate was very near the average for England and Wales, and if allowance for deaths of visitors be made it will be seen that the rate of mortality during the year was a low one.

The Zymotic mortality was slightly higher than the average for England and Wales. The mortality among infants shows a marked decline from that of 1895, and the death-rate among aged persons shows a fall which is counterbalaneed by an increased number of deaths from the chief respiratory diseases.

Notification of Infectious Diseases. — During the twelve months there were notified 109 cases of infectious disease, as follows:—

Diphtheria	45
Scarlet Fever	39
Enteric Fever	21
Erysipelas	4

During 1895, 37 cases of infectious disease were notified.

The outbreak of Diphtheria was spread over a period of six months, being at its height in August. The following features were to be observed in this outbreak.

1. School attendance did not appear to have much share in the spread of the disease. Out of 45 cases only 8 were of children in attendance at school immediately before symptons of the disease were shown. These eight children had been attending three different schools.

2. Influence of milk supplies. No evidence was obtained that any special milk supply was implicated in the spread of the disease.

3. Influence of insanitary surroundings. In a large proportion of the cases notified, nothing insanitary was discovered in the environment, but on the contrary an unusually good condition of sanitation and cleanliness was observed. In one street where a special incidence of the outbreak was experienced an insanitary condition of affairs due to defective drainage was discovered.

4. Influence of contact. Contact with a previous case, or with articles which had been exposed to infection was traced in a considerable number of the persons attacked, and by this channel more especially the disease appears to have spread.

The outbreak of Scarlet Fever was distributed throughout the year and was of mild type, none of the cases proving fatal.

The cases of Enteric Fever occurred chiefly in the autumn months. Some of these were imported cases. Three were children in an overcrowded house outside the town where the water supply was obtained from a polluted source.

Sanitary Work of the Year.—

Water Supply. — The daily quantity supplied varies from about 450,000 to 550,000 gallons per day, according to the time of the year.

New mains, 1,510 yards long, have been laid, and 31 houses have been supplied with water. The high lying districts on the Great Orme and in Nantygamar have not yet been provided with a supply.

Sewerage.—The extensive work of laying the new relieving sewer and the new outfall has made marked progress during the year. Besides this work, 1,626 yards of new sewers have been laid to serve 19 houses.

Scavenging.—The new system of scavenging has been carried into effect for the whole of the town, and has proved an undoubted boon. The galvanized iron bins which are supplied to every house have replaced the insanitary middens which formerly existed, and great improvement of the condition of the back yards and streets has resulted The bins are called for once a week in summer, and once a fortnight in winter. The cost of supplying these bins has been about £400.

Housing of the Working Classes. — The sanitary condition of these houses has been systematically investigated by the Authority, and all defects discovered have been stringently dealt with. One house has been closed as unfit for habitation. The new houses which the Authority decided to build are now approaching completion. The demand in the district for this class of dwellings may be judged from the fact that for these nineteen houses 150 applications from would-be tenants have been received. This experiment in municipal enterprise, the first in North Wales, has been productive of such results that the Council have acquired another site upon which it is proposed to erect a large number of dwellings suitable for workingmen's families.

The 34 Bakehouses and Workshops of the district have been regularly visited by the Sanitary Inspector, and various requirements insisted on.

Special attention is paid to the Dairies, Cowsheds, and Milk-shops of the district.

Slaughter Houses.—The nine slaughter houses of the town have been regularly supervised. Plans of a Model Abattoir have been prepared by the Surveyor and approved of.

Sanitary Inspector's Record for the year 1896.

No. of complaints received	19
„ inspections of houses or premises ...	800
„ orders given for the sanitary amendment of houses or premises ...	255
No. of houses or premises cleansed, repaired, or whitewashed	12
„ houses disinfected or supplied with disinfectants	92
„ drains repaired, cleansed, or trapped	59
„ house drains ventilated	2
„ W.C.'s supplied with water ...	3
„ houses newly provided with a supply of water	31
„ accumulations of manure and refuse removed	14
„ animals removed on account of being a nuisance	9
„ legal proceedings taken	2
„ houses closed as unfit for habitation...	1

COLWYN BAY URBAN SANITARY DISTRICT.

Area	5,231 acres.
Population, Census 1881 ...	2,418
„ „ 1891	4,754
Estimated population, June, 1896	5,961

Birth-rate.—The births registered during the year were 149 in number, or at the rate of 24·9 per 1000 of population. During 1895, the birth-rate was 18·3 per 1000.

Death-rate.—The number of deaths registered from all causes was 93, which was at the rate of 15·6 per 1000 of population. Of these deaths, 17 were stated to be visitors. The remaining 76 deaths were at the rate of 12·7 per 1000, which was the general death-rate among residents. During 1895, the gross death-rate was 16·2 per 1000, and the death-rate among residents 13·9 per 1000.

Zymotic Mortality.—The principal Zymotic diseases were the cause of 14 deaths, being at the rate of 2·34 per 1000 of population. Of these, 11 were caused by Scarlet Fever, and 3 by Whooping Cough. In 1895, the Zymotic Mortality was 1·39 per 1000.

Infantile Mortality.—Of infants under 1 year of age there were 11 deaths, or in the proportion of 73 per 1000 registered births; as compared with 161 per 1000 registered births, which was the Infantile Mortality during 1895.

Death-rate among persons aged 65 and upwards.—In this class there were 25 deaths, or at the rate of 4·1 per 1000 of population. During 1895, the death-rate in this class was 4·3 per 1000.

Death-rate from Phthisis.—Phthisis was the cause of 13 deaths, or at the rate of 2·1 per 1000 of population. Among these were the deaths of 4 visitors, so that the Phthisis death-rate among residents was 1·5 per 1000 of population. During 1895, the Phthisis death-rate was 1·0 per 1000.

Death-rate from the chief Respiratory Diseases.—Ten of the deaths were ascribed to the chief Lung Diseases, being at the rate of 1·6 per 1000 of population. During 1895, the death-rate in this group was 1·7 per 1000.

The birth-rate of the year shows a rise from the low birth-rate of 1895 to the usual birth-rate of this district. The general birth-rate was a low one. The rise in the Zymotic Mortality was more than counterbalanced by the fall in the mortality among infants, and from the group of "all other diseases."

Notification of Infectious Diseases—There were notified during the year 174 cases of the usual notifiable diseases, besides 27 cases of Measles, 18 of German Measles, and 1 of Whooping Cough.

These 174 cases were as follows :—

Scarlet Fever	168
Enteric Fever	2
Diphtheria	1
Membranous Croup ...	1
Puerperal Fever	1
Erysipelas	1

During 1895, 95 cases were notified.

The district suffered to a considerable extent throughout the year from outbreaks of Scarlet Fever, Measles, and German Measles, especially during the latter half of the year. These outbreaks necessitated a great amount of labour on the part of the sanitary staff, in order to investigate the different cases, and to direct all possible precautionary measures. The absence of a hospital for isolation purposes was felt very keenly. Endeavours to obtain a temporary hospital were made, and a small house was rented for the purpose. This honse, though of limited accomodation, and in a position very difficult of access, has rendered good service in several instances. During the year, 11 patients have been isolated in this building, all of whom recovered.

The day Schools in Old Colwyn had to be closed for prolonged periods during July, August, and October. In November, the School Board, acting upon my recommendation, closed their Schools in Colwyn Bay. This closing, which lasted five weeks, had a marked effect upon the outbreaks. This is shown by the fact that during the month immediately preceeding the closing, 51 cases were reported, and during the previous month 39 case . During the month immediately subsequent to the closing, 30 cases were notified, during the following month, 6 cases, and during the ensuing two months, 3 and 2 cases respectively.

The sanitary progress effected by the Authority during the year has been considerable. New streets and buildings have been

constructed at a rapid rate, and stringent supervision has been exercised in order to ensure the enforcement of the building bye-laws. Intercepting traps are now required to be fixed on the drain of each house before connection with the sewer. This provision is a wise one, as by it the dwellings are rendered secure against the entrance of sewer gas, and besides this, there is the practical advantage that the sanitary condition of each house can be much more thoroughly assured. The Authority have provided a smoke machine, which has proved of great utility in testing drains.

Sewerage.—Several improvements have been effected to the main sewers, and the better ventilation and cleansing of the same arranged for. An extension of the public sewers at Rhos has enabled a large number of insanitary privies to be replaced by proper W.C.'s.

Water Supply.—The water supply during the year to the higher levels was an unsatisfactory one, and loud complaints as to scarcity of water were frequent. In spite of all efforts on the part of the Surveyor to arrange for a supply for the higher levels, the supply fell far short of their requirements, the reason being that the trunk main of the district was too small for the rapidly increasing needs of the place. After great delay, steps have now been taken to lay a larger main, and it is to be trusted that all parts of the district will before long be amply supplied with water. New water mains of the length of 1270 yards have been laid to serve a large number of houses.

The scavenging of the district is now effected by the Authority, and a much more satisfactory state of back yards and streets is now to be seen. About 200 bins are now in use, the contents of which are called for weekly. It is to be trusted that all middens will now be abolished through each house being provided with a metal bin.

The Slaughter houses of the district have been periodically inspected and notices served for the necessary cleansing and white-washing of the same.

Special attention has been paid to the Dairies, Milkshops and Cowsheds of the district. They were registered during the year.

The Bakehouses, Workshops and Work places were all visited and various necessary improvements insisted on. Special precautions were taken with the Laundries of the district, in order to prevent them becoming the media for the spread of infection.

Sanitary Inspector's Record for the year 1896.

No. of complaints received 154

„	inspections of houses or premises ...	1,827
„	orders given for the sanitary amendment of houses or premises	256
No. of	houses cleansed, repaired, or whitewashed	20
„	houses disinfected or supplied with disinfectants	85
„	house drains opened, repaired, cleansed, or trapped	99
„	house drains ventilated	27
„	W.C.'s new provided and privies abolished...	30
„	W.C.'s repaired	42
„	W.C.'s provided with water	34
„	houses supplied with a supply of water	73
„	accumulations of manure and refuse removed	16
„	animals removed on account of being a nuisance	14
„	legal proceedings taken ...	6
„	houses closed as unfit for habitation ...	5

VITAL STATISTICS FOR THE YEAR

AND

METEOROLOGICAL OBSERVATIONS,

ETC., DURING 1896.

VITAL STATISTICS FOR 1896.

Name of District.	Birth-rate per 1000 of population.	Death-rate per 1000 of population.	Zymotic Mortality per 1000 of population	Infantile Mortality per 1000 registered births.	Death-rate of persons aged 65 years and upwards.	Phthisis death-rate per 1000 of population.	Death-rate from the chief Respiratory Diseases.
Rural Districts—							
Llanrwst ...	28·0	18·7	1·82	155	6·3	1·2	2·8
Bettwsycoed ...	24·4	18·0	0·94	100	5·2	1·6	2·6
Deudraeth ...	27·8	19·3	2·07	206	5·3	2·2	2·9
Glaslyn ...	32·0	21·9	...	134	7·8	2·1	1·5
Lleyn ...	22·6	18·5	1·04	95	8·4	1·9	2·0
Gwyrfai ...	30·2	19·3	1·28	130	6·4	2·3	2·4
Dwyran ...	16·9	11·9	0·33	156	3·6	1·9	1·3
Ogwen ...	24·8	20·6	2·43	132	7·1	2·4	2·4
Aethwy ...	27·0	18·8	1·02	105	7·5	1·8	2·3
Conway ...	27·4	15·0	1·76	92	5·0	1·1	1·1
Glan Conway ...	24·0	12·7	...	27	8·6	0·66	...
Urban Districts—							
Ynyscynhaiarn	22·8	20.2	2·56	112	5·9	1·7	2·9
Criccieth ...	15·9	15·9 13·4	0·63	80	6·3	2·5	1·2
Pwllheli ...	23·8	16·1 14·5	1·55	116	6·5	0·93	3·1
Carnarvon ...	24·1	20·5 19·9	1·46	116	5·0	2·7	3·3
Menai Bridge ...	20·5	20·5	2·34	171	5·8	4·6	1·1
Bangor ...	27·6	20·0 19·3	3·47	136	4·7	2·0	1·7
Bethesda ...	32·1	25·2	2·11	143	8·8	1·9	3·2
Llanfairfechan...	26·9	14·2 13·0	1·15	100	3·8	0·77	1·1
Penmaenmawr	22·2	13·2 11·2	...	102	3·6	0·99	1·9
Conway ...	35·6	20·3 14·6	0·28	55	6·7	1·9	0·84
Llandudno ...	22·5	17·4 14·1	2·42	143	3·0	0·92	3·2 2·7
Colwyn Bay ...	24·9	15·6 12·7	2·34	73	4·1	2·1 1·5	1·6
Rural Districts	26·7	18·6	1·33	127	6·7	1·9	2·3
Urban do.	25·5	18·9	2·03	116	5·1	1·8	2·4
All Combined Districts ...	26·2	18·7	1·60	122	6·0	1·9	2·3
England & Wales	29·7	17·1	2·18	148			

NOTE.—When two deaths are shewn for a District, the lower of the two is the corrected rate.

METEOROLOGICAL OBSERVATIONS OF THE YEAR.

Month.	CARNARVON.									COLWYN BAY.						
	Mean reading of Barometer.	Dry and Wet bulb temperature.		Temperature in shade.		Mean Temperature in shade.	Mean amount of Cloud	Rain.		Temperature in shade.		Mean Temperature in shade.	Sunshine.		Rain.	
		Dry.	Wet.	Maximum.	Minimum.			Amount collected in inches.	No. of days on which rrin fell.	Maximum.	Minimum.		Hours.	Sunless days	Amount Collected in inches.	No. of days on which rain fell.
January	30·96	43·1	42·4	48·5	41·2	44·8	7·8	2·10	14	48·0	39·0	43·5	74·5	9	0·78	10
February	30·28	43·8	42·3	48·2	41·4	44·8	7·5	1·55	14	48·4	38·9	43·9	78·5	7	0·96	7
March	29·78	45·9	44·9	49·2	41·0	45·0	7·8	5·26	20	50·6	40·3	45·4	116·6	6	4·03	25
April	30·17	50·4	47·5	54·8	45·0	49·9	5·5	1·055	10	53·9	44·8	49·4	194·0	2	0·95	14
May	30·34	58·1	52·9	63·9	46·6	55·2	3·2	0·38	4	60·1	46·3	53·2	313·5	0	0·30	3
June	30·01	60·4	57·5	64·8	52·3	58·5	4·7	2·54	10	66·4	53·1	59·8	234·9	0	2·11	16
July	30·15	61·3	59·1	66·2	55·5	60·8	6·2	3·735	16	66·6	55·0	60·8	208·6	2	4·19	14
August	30·11	59·0	55·3	64·2	52·2	58·2	6·8	4·06	15	63·0	54·8	58·9	164·0	0	4·29	17
September	29·47	57·4	54·5	61·8	51·8	56·8	8·1	3·98	20	61·2	52·1	56·7	99·4	3	5·17	24
October	29·10	47·9	47·2	53·1	40·8	46·9	6·6	5·77	20	50·9	41·8	46·4	81·1	5	4·90	21
November	30·13	43·2	41·0	50·9	38·0	44·4	6·9	2·32	9	47·9	37·7	42.8	78·8	8	1·23	10
December	29·77	43·0	40·6	47·6	30·7	39·1	7·0	6·77	23	46·6	37·3	42·0	41·0	11	3·86	24
Mean for the year	30·02	51·1	48·7	56·1	44·7	50·3	6·5			55·3	45·0	50·2				
								39·52	175				1684·9	53	33·23	185

Month.	LLANDUDNO.					ROYAL OBSERVATORY, GREENWICH.				
	Temperature in shade.		Rain.			Temperature in shade.		Rain.		
	Maximum.	Minimum.	Amount collected in inches.	No. of days on which it fell.	Mean amount of cloud.	Maximum.	Minimum.	Amount collected in inches.	No. of days on which it fell.	Mean amount of cloud.
January	47·0	40·3	1·20	9	5·4	44·4	36·2	0·64	9	8·0
February... ...	48·3	38·9	1·06	13	5·8	45·5	35·2	0·35	6	6·3
March	50·0	40·1	4·11	23	6·9	53·1	39·7	3·00	22	7·3
April	54·3	45·0	1·35	14	4·4	57·4	41·4	0·56	10	6·9
May	61·0	47·1	0·53	3	4·4	65·1	41·5	0·27	5	5·0
June	66·6	53·9	2·17	16	5·9	75·3	55·5	1·94	11	5·5
July	66·8	55·2	2·97	14	6·2	77·6	54·8	1·07	7	5·3
August	63·1	55·2	2·81	18	6·7	69·0	51·7	2·06	15	6·9
September ...	61·7	52·0	4·77	24	4·7	64·5	51·2	5·54	23	7·5
October	51·1	42·3	4·20	21	6·2	53·5	40·7	2·80	19	6·8
November ...	47·9	38·7	1·04	8	4·6	45·6	35·8	1·19	9	6·4
December ...	45·8	37·9	4·19	25	6·5	43·8	35·6	3·00	22	8·1
Mean for the year ...	55·3	45·5			5·6	57·9	43·2			6·6
Total for the year ...			30·40	188				22·42	158	



CARNARVON:

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